1 Auto Body Repair Step-By-Step

By now, you should be familiar with the basic regulatory requirements for your shop and you should have obtained the commercial registrations that are required for your shop.

You are now ready to focus on specific actions that you can take to achieve compliance with state and federal law and reduce waste generation. This section provides specific actions for common auto body repair activities that you preform. It provides you with:

- ➲ an explanation of risks associated with each auto body repair activity and how compliance can reduce these risks
- ➲ simple compliance Do's and Don'ts for each activity
- ➲ specific tips on how you can prevent pollution and save money

Before you start working on any vehicle, you should take a few steps to ensure your safety and to reduce impacts to the environment that may result from short-term or long-term vehicle storage. Whether the vehicle is stored inside or outside, conduct the following:

- ✔ check the vehicle for any leaks;
- ✔ use drip pans if leaks are evident; and
- ✔ if a car is suspended on a floor jack, make sure jack stands are used.

Once you have secured the vehicle and checked its condition for possible hazards, use this section's activity-specific guides to learn about environmental, health, and safety (EHS) and pollution prevention tips for each activity. Six activities common to most auto body shops are discussed in this section as shown in Figure 1-1.

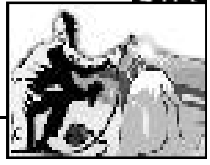

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FIGURE 1-1

AUTO BODY REPAIR ACTIVITIES

1.1 Vehicle Washing

GREATEST RISKS

- Pollutants in vehicle washing wastewater could contaminate a well or water body, and you could be held responsible.
- Hi-pressure washers save water, but the high-pressure spray can lead to eye injuries unless proper protective gear is used.

BEST FIXES

- Indoor Washing: if you discharge to a sewer, use an oil/water separator (also known as a "gas trap"); if you discharge to a septic system, don't discharge ANY industrial wastewater to the septic system.
- Outdoor Washing: use a bermed wash area; collect the washing wastewater; separate any contaminants; dispose of them with industrial or hazardous waste (as appropriate); and discharge the treated wastewater to the drain. (See Section 2.1.2.B of the Workbook for more information).

HOW DO I COMPLY?

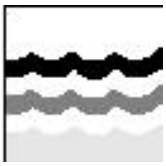
The *Dos and Don'ts* below will help you comply with air, water, hazardous waste, and health protection and fire prevention requirements. The *Cleaner and Safer Operation Tips* also can help you improve compliance and the *What Ifs* answer common regulatory questions.

VEHICLE WASHING DOS AND DON'TS

AIR

- DO use wash products that contain 1.67 pounds per gallon or less of volatile organic compounds (VOCs), when doing a solvent wipe-down. See Section 2.1.2.A of the Workbook for a table of VOC limits and ask your supplier for more information, if necessary.

WATER



- DO check each vehicle thoroughly for any leaking fluids (such as oil, battery fluids, antifreeze, and fuel) BEFORE washing it. Use drip pans or absorbents to collect leaking fluids. Wash the vehicle only AFTER any drip pans or absorbents have been removed.
- DO use phosphate-free and biodegradable detergents. Ask your supplier for

information on these products.

- DO use oil/water separators to remove particulates and oils from vehicle washing wastewater, if you do any washing indoors and your floor drains are not sealed.
- DO use pressure washing equipment to save water, improve cleaning, and save money.

- DON'T discharge washing wastewater containing petroleum, antifreeze, or battery acids into water bodies, storm drains, sewer pipes, septic tanks, or onto the ground.
- DON'T discharge ANY vehicle washing wastewater or other shop wastewater to a septic tank.
- DON'T steam clean engines or chassis unless your shop is equipped to manage the associated wastes properly.

HAZARDOUS WASTE

- DO use a drip pan to collect hazardous liquids such as oils, antifreeze and battery acid. Manage these liquids as separate hazardous waste streams and collect them in closed containers before recycling or disposing of them.
- DON'T mix different hazardous wastes in the same container – it's more expensive for your disposal company to handle the waste.
- DO place rags that have been contaminated with oil or antifreeze in a self-closing fire resistant metal container.
- DON'T store rags containing hazardous materials in open containers.
- DON'T store rags containing hazardous materials in rusting, cracked, or otherwise damaged containers.
- DO check whether rags are hazardous or nonhazardous under the "One-drop Policy." If you can squeeze out *even one* drop of solvent or paint from a used cleaning rag, then you must dispose of it as hazardous waste (see Section 2.1.2.C of the Workbook for more information).
- DO manage acids separately. For very small quantities of battery acid, you may neutralize the acid with baking soda and dispose of the waste with your wastewater stream. For larger quantities, collect it in a drum that is resistant to acid degradation and manage the acid waste as a corrosive hazardous waste.

HEALTH PROTECTION AND FIRE PREVENTION

- DO wear goggles to protect your eyes. You also may need a face shield if you are doing a pressure wash with water at a pressure greater than 1,300 pounds per square inch (psi).

CLEANER AND SAFER OPERATION TIPS

- Minimize water use. High-pressure washers use less water and clean better.
- Always wash vehicles on a surface such as cement or sealed pavement; never wash vehicles on or near exposed soil. Identify areas where vehicles may be washed, and make sure all employees use only these areas. Solid, crack-free surfaces prevent wastewater from seeping into the ground where it may end up polluting nearby wells or groundwater systems.
- If doing an indoor washdown, first sweep the floor and clean up any spills that could contaminate the wastewater.
- For outdoor washing, use a specially designed wash mat, a tarp, or a bermed area to collect and manage wastewater. See Section 2.1.2.B of the Workbook for a discussion of why this is important and how you should handle your wastewater from outdoor vehicle washing.
- If you must use phosphate-based soaps for whitewall cleaning or other special uses, clearly label the bottle containing the phosphate-based material "For Whitewalls and Special Uses Only" and keep it in a designated area.
- If your shop is not on a sewer line, and collecting water is infeasible, you might consider using commercial car washes for full-body cleaning of vehicles. This is one way to ensure that wastewater from vehicle washing will not cause any potential liabilities to your shop. Use rags for intermediate washing steps.
- Separate and recycle antifreeze (no recycling permit is required).
- Collect used oil for fuel burning – If your facility generates enough used oil to justify burning it, you will need a Class A recycling permit from the DEP unless you are a very small quantity generator (VSQG). If you want to obtain this permit, contact DEP and ask for application number BWP HW 21 (see the contact information in Section 3.2 of the Toolbox).

WHAT IF???

Q A

What if non-phosphate soaps don't clean my whitewalls well enough?

If you need to use phosphate-based soaps, use as little as possible. First spray on whitewall cleaner, then rub off with a nylon abrasive pad. Wash down the wheels and tires only after pre-wiping with the whitewall cleaner. See the Cleaner and Safer Operation Tips above for information on labeling phosphate-based cleaners.

Q A

What if I need to handle broken batteries?

Undamaged batteries can be recycled. Cracked or broken batteries must be disposed of as hazardous waste.

Q
A

What if I can't afford an oil-water separator right now?

Separators are required for new shops and shops doing major additions. For existing shops, separators are recommended. You also should implement best management practices. For a low cost approach, see Toolbox Section 3.6 (Figure 3-3).

Q
A

I wash cars indoors, my floor drains are sealed, and I am not connected to a sewer. How should I manage my wastewater?

There are several options, but you **MUST NOT** send washing wastewater to a septic system. See Section 2.1.2.B of the Workbook for a discussion on managing your wastewater.

Q
A

What if a spill occurs even though we tried to prevent it?

If the spill is of a regulated material AND is **released to the environment** AND is a reportable quantity, you must report it immediately to the proper authorities. See Section 2.1.2.C of the Workbook for more information on proper spill management. Reportable quantities are listed below.

Regulated Material		**Reportable Quantity**
paint	=	greater than 1 gallon
paint thinner	=	greater than 1 gallon
oil	=	greater than 10 gallons
power steering fluid	=	greater than 10 gallons
automatic transmission fluid	=	greater than 10 gallons

If a spill meeting the conditions above occurs, you should contain the spill first, then call the state spill report hotline at (617) 556-1133 for the Boston Area or (888) 304-1133 for other parts of Massachusetts. You also should report that spill to DEP within 24 hours using a spill report form such as the one provided in Section 3.6 of the Toolbox.

1.2 Frame Work and Structural Work

GREATEST RISKS

- Working with heavy machinery and equipment can result in worker injuries if sufficient safety precautions are not taken.
- Improper management of leaking vehicle fluids can lead to ground and water pollution, which are subject to regulatory penalties and expensive cleanup measures.
- Release of refrigerants into the air is against the law and damages upper-level ozone.

BEST FIXES

- Train employees about proper safety precautions.
- Check damaged vehicles immediately for leaking fluids and follow the management tips provided below.
- Make sure that all employees working "under the hood" are certified motor vehicle air conditioning (MVAC) technicians.

HOW DO I COMPLY?

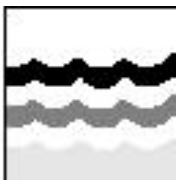
The *Dos and Don'ts* below will help you comply with air, water, hazardous waste, and health protection and fire prevention requirements. The *Cleaner and Safer Operation Tips* also can help you improve compliance and the *What Ifs* answer common regulatory questions .

VEHICLE FRAMEWORK DOS AND DON'TS

AIR

- DO recover and recycle motor vehicle air conditioning (MVAC) refrigerants. DO inspect around MVAC units for bent pipes, which can result in MVAC gas leaks.
- DO complete a certification form that lists the names of your shop's certified technicians and equipment and mail it to the U.S. Environmental Protection Agency (EPA). You can obtain this form from EPA Region 1 (see Section 3 of the Toolbox for contact information).
- DO make sure that all MVAC work is done by a **certified** technician. EPA or EPA-approved MVAC repair certification organizations should be used.
- DO check a vehicle periodically as you work on it, since leaking fluids may move slowly and you may not see them at first.
- DON'T let MVAC refrigerants leak into the air. Make sure airtight connections and appropriate, EPA or EPA-approved equipment certifications exist.

WATER



- DO capture antifreeze and other vehicle fluid leaks with a drip pan or absorbent materials.
- DON'T allow antifreeze or other vehicle-related fluids to run into floor drains, storm drains, water bodies, septic tanks, or onto the ground.

HAZARDOUS WASTE

- DO store absorbent materials used to cleanup battery acid, MVAC fluids or other hazardous wastes in appropriate containers. Antifreeze generally is not considered a hazardous waste by the Massachusetts Department of Environmental Protection (DEP) if kept separate from other materials.
- DO properly store antifreeze and recycle it on-site or off-site.
- DON'T discharge used antifreeze with your wastewater stream without permission from your local treatment plant, known as a publicly owned treatment works (POTW).
- DON'T mix different types of hazardous waste. Your disposal company will charge you more for it because it will be harder for the company to properly treat the waste.

HEALTH PROTECTION AND FIRE PREVENTION

- DO check the pull chain regularly for signs of wear; replace worn chains. When using the pull chain, use a clip or a blanket placed crosswise over the chain to dampen the chain and prevent or protect against a possible chain snap.
- DO remove any twists in the chain before pulling, in order to avoid weakening the chain.
- DON'T wrap the pull chain around fuel or oil lines. This can result in spills or explosions and serious injury to you or your employees.
- DO check all clamping devices. The pull chain should be connected to clamps on both ends.
- DO check hydraulic pressure hoses and look for cracks, breaks, burn marks, etc. You will know there is a leak if you see dust sticking to the hose. Repair leaks or replace these hoses.
- DO wear American National Standard Institute (ANSI)-approved, impact resistant eye protection with side shields; wear cut-resistant gloves when removing or working with sharp materials or edges.
- DO check pressure gauges and adjust pressure appropriately.
- DO maintain equipment regularly to prevent accidents. KEEP ALL OPERATING MANUALS for use by yourself and employees.
- DON'T operate power equipment if there are fuel or flammable fluid leaks.

- DON'T use water-only fire extinguishers – depending on the cause of the fire, you can actually make it worse by adding water; if it is an electrical fire you might electrocute yourself. Ask your supplier or vendor to recommend the right extinguishers for your shop and train employees to properly use the extinguishers.

CLEANER AND SAFER OPERATION TIPS

- Have drip pans easily available for handling drips and leaks. If possible, designate drip pans for specific types of wastes, to allow for more uses between cleanings. Use absorbents or rags to wipe out drip pans, once waste liquid has been disposed of properly (into oil-water separator, wastewater separator or filter system, or into hazardous waste barrel). Use spill-safe funnels and non-drip dispensing systems. Capture drum-top spills before the liquid either becomes unusable or spills onto the floor. Keep absorbent pads, socks, etc., handy when pouring or transferring liquids collected liquids into containers.
- If absorbents are necessary for clean-up of leaks or spills, use reusable mats, socks or other absorbents that are easily cleaned. You may consider using an absorbent cleaning/ recycling service. Having drip pans handy often can help you avoid the use of absorbents. Cleaning services that allow you to reuse absorbent pads or socks can cost roughly $1.50 per pound (call 1-800-770-BOOM for information on this option).
- Consider collecting used oil for heating fuel. You will need a Class A recycling permit (BWP HW 21) from the state DEP, unless you are a very small quantity generator (VSQG) of waste oil. Furnaces capable of burning waste oil are subject to a number of specific fire code requirements. Contact your local fire official. Hint: purchase and installation of waste-oil burners tends to be cheaper during summer months, when waste oil may not be burned.

WHAT IF???

Q A ***What if a spill of hazardous materials like antifreeze, oil, or gasoline occurs while I am dismantling a car?***

Review the list of Reportable Quantities in the Workbook on page 2-14. If a spill occurs at your shop that involves a release to the environment of greater than a reportable quantity, you MUST report that spill to DEP using a form such as the one included in the Toolbox Section 3.6. Also, you should call the state spill report hotline at (617) 556-1133 for the Boston Area or (888) 304-1133 for other parts of the state.

Q A ***What if I have old or exploded air bags that I removed from a damaged car during dismantling?***

In Massachusetts, exploded air bags are not considered a hazardous waste.

Q
A

What if I have a halon fire extinguisher in my shop?

Halon fire extinguishers are no longer manufactured. If you have one you can keep it in your shop until you can safely dispose of it. Make sure that your shop has at least one all-purpose, non-halon ABC-rated or a carbon-dioxide (CO_2) fire extinguisher in the shop, and that it is accessible.

1.3 Cutting and Welding

GREATEST RISKS

- Explosion, fires, or worker injuries can result from stray sparks if safety precautions are not adequate.
- Worker injury from exposure to dusts or fumes can occur if safety precautions are not adequate.

BEST FIXES

- Use sufficient ventilation and personal protective equipment (PPE), and make sure no combustible liquids, gases or materials are within the work area.
- Train employees in proper safety precautions, including the use of non-halogen fire extinguishers.

HOW DO I COMPLY?

The *Dos and Don'ts* below will help you comply with air, water, hazardous waste, and health protection and fire prevention requirements. The *Cleaner and Safer Operation Tips* also can help you improve compliance and the *What Ifs* answer common regulatory questions.

CUTTING AND WELDING DOS AND DON'TS

AIR

- DO install filters to control welding fumes inside the shop. It is best to use a local or portable exhaust ventilation system that you can place at the source (where the fumes are generated).
- DO inspect filters regularly and replace as needed. Spent filters can be disposed as regular solid waste (trash).

WATER

- DO prevent any metal dusts from entering your wastewater stream.

HEALTH AND FIRE PREVENTION

- DO wear a face shield with the lens of proper shading when welding or using cutting torches (shading depends on type of welding operation). See Toolbox page 2-12 for a guide to lens shading.
- DO wear arm length leather gloves and/or a leather apron, and clothes made from cotton or other natural fibers. If you are doing overhead welding, wear a snug collar and boots, and keep them laced up and tied to prevent hot slag from burning your feet.
- DO make sure any gas cylinders are properly chained and held in position; watch for leaks. Make sure welding clamps do not pierce fuel or oil lines.
- DO have a second person as a spotter to check for stray sparks or welding flak when you are welding.
- DO stop welding and torch activities at least 1 hour before closing time to check for smoldering that can lead to overnight fires.
- DO keep at least one all-purpose, non-halon ABC-rated or a carbon-dioxide (CO_2) fire extinguisher in the shop. Make sure it's accessible.
- DON'T weld if there are flammable fluid leaks around you. A fire or explosion can result.
- DON'T weld if you can smell or see any flammable fluid leaks.
- DON'T smoke while you are doing electric cutting or welding.

CLEANER AND SAFER OPERATION TIPS

- For any activities that require the use of a respirator or mask, have each employee fit test and fit check the items to make sure that they perform properly. The manufacturer and/or supplier of the items should provide you with the necessary instructions for fit testing.
- Use a pan or mat to collect metal or paint dust (for example, a standard drip pan, tarp, or plastic mat). If it is not feasible to collect metal debris in this manner, make sure to sweep the area and collect dusts before any washing or wet-sanding.
- Use "flashback" tips between the torch and the regulator to prevent flashback from occurring.

WHAT IF???

Q
A

What if shop personnel won't wear the personal protective equipment (PPE)?

You, the employer, are responsible for your employees' health and welfare. If they refuse to wear protective equipment, you can incur an OSHA penalty, which you, as the employer, must pay. You must make protective gear available, train your employees to use it, and make sure that it is used and in good condition. To help make sure that your employees comply with proper Environmental, Health, and Safety (EHS) procedures, make EHS a required part of each employee's performance review.

Q
A

What if I vent fumes from my welding operation through the duct I use for general shop exhaust?

This will not likely cause an air quality problem and is allowed.

1.4 Vehicle Dismantling

GREATEST RISKS

- Working with heavy machinery and equipment can result in worker injuries if sufficient safety precautions are not taken.
- Improper management of leaking vehicle fluids can lead to ground and water pollution, which are subject to regulatory penalties and expensive cleanup measures.
- Release of refrigerants into the air is against the law and damages upper-level ozone.

BEST FIXES

- Train employees about proper safety precautions.
- Check damaged vehicles immediately for leaking fluids and follow the management tips provided below.
- Make sure that all employees working "under the hood" are certified motor vehicle air conditioning (MVAC) technicians.

HOW DO I COMPLY?

The *Dos and Don'ts* below will help you comply with air, water, hazardous waste, and health protection and fire prevention requirements. The *Cleaner and Safer Operation Tips* also can help you improve compliance and the *What Ifs* answer common regulatory questions.

VEHICLE DISMANTLING DOS AND DON'TS

AIR

- DO recover and recycle MVAC refrigerants.
- DO inspect around MVAC units for bent pipes, which can result in MVAC gas leaks.
- DO make sure that all MVAC work is done by a **certified** technician. EPA or EPA-approved MVAC repair certification organizations should be used.
- DO check a vehicle periodically as you work on it, since leaking fluids may move slowly and you may not see them at first.

- DON'T let MVAC refrigerants leak into the air. Make sure airtight connections and appropriate, EPA or EPA-approved equipment certifications are obtained.
- DON'T mix refrigerants.

WATER

- DO all vehicle dismantling on paved, crack-free surfaces, away from drains.
- DO capture antifreeze and other fluid leaks with a drip pan or absorbents.
- DON'T allow antifreeze and other fluid drips into floor drains, storm drains, nearby bodies of water, septic tanks, or the ground.
- DO store dismantled parts indoors, away from wind, rain, and sun to prevent rust and the need for additional cleaning.

HAZARDOUS WASTE

- DO store materials used to cleanup battery acid, MVAC refrigerants, or other hazardous wastes in appropriate containers.
- DO keep different types of wastes in separate containers.
- DO remember that spent air bags are NOT considered a hazardous waste.
- DO test periodically to make sure that your antifreeze is nonhazardous. Used antifreeze can contain regulated levels of copper or other metals which make it hazardous.

HEALTH PROTECTION AND FIRE PREVENTION

- DO wear American National Standards Institute (ANSI)-approved, impact-resistant eye protection with side shields; wear cut-resistant gloves when removing or working with sharp materials or edges.
- DO wear hearing protection when using an air chisel.
- DO look for breaks in battery cables.
- DO keep at least one all-purpose, non-halon ABC-rated or carbon-dioxide (CO_2) fire extinguisher in the shop.
- DO make sure employees are properly trained to use fire extinguishers.
- DO make sure that you have baking soda on hand to clean up (neutralize) an accidental spill of battery acid.
- DON'T use a water-only fire extinguisher. Depending on the cause of the fire, water might make it worse.
- DON'T handle battery acid without protective gloves.

- DON'T mix different types of hazardous waste. Your disposal company will charge you more for it because it will be harder for them to properly treat the waste.
- DON'T operate power equipment if there are fuel or flammable fluids leaks.

CLEANER AND SAFER OPERATION TIPS

- Separate and recycle antifreeze (no recycling permit is required).
- Collect used oil for fuel burning – you will need a Class A recycling permit from the DEP unless you are a VSQG. If you are interested in obtaining this permit, contact DEP and ask for application number BWP HW 21.
- Drain and crush used oil filters, if possible. The oil may be recycled. The filter case may be recycled as scrap metal.
- In some cases, gas and oil can be reused. Try to recover these materials instead of immediately disposing of them as waste.
- Make a plan to actively search for leaks and spills and minimize them. You will end up saving money on the amount of absorbent materials that you use. This will reduce your hazardous waste volume.
- Maintain good housekeeping techniques such as sweeping floors and wiping up spills prior to dismantling.
- Recycle brake waste whenever possible. Call OTA for more information on this option.

WHAT IF???

Q

What if a car arrives at my shop and its MVAC refrigerant containment system is already leaking?

A

If a release of MVAC refrigerant occurs, you should still evacuate the system to recover refrigerant, as some refrigerant may remain in the containment system lines.

Q

What if a spill of hazardous materials like antifreeze, oil, or gasoline occurs while I am dismantling a car?

A

See the list of Reportable Quantities on page 2-14 of the Workbook. If a spill occurs at your shop, you should immediately contain the spill and report the spill to the Massachusetts Department of Environmental Protection (DEP) using a form such as the one included in Section 3 of the Toolbox. Also, you should call the state spill report hotline at (617) 556-1133 for the Boston Area or (888) 304-1133 for other parts of Massachusetts.

Q
A

What if I have a halon extinguisher in my shop?

Halon extinguishers are no longer manufactured. You can keep the halon extinquisher in your shop until it can be properly disposed. Make sure that your shop has at least one all-purpose, non-halon ABC-rated or a carbon-dioxide (CO_2) fire extinguisher in the shop, and that it is accessible. Section 5 of the Toolbox defines ABC-ratings for fire extinguishers.

Q
A

What if I have been dismantling vehicles on a dirt surface or I observe that there are cracks in the floor or a drain near the area where I dismantle vehicles?

Stop this practice. Check the surface for visual signs of releases such as: stained soil, worn pavement, discolored pavement, or other visible signs. If these are visible and you think that a spill or release has occurred, consult your trade association or an environmental consultant to determine if sampling and remediation are warranted. Secondly, you may wish to report a spill or call the DEP for further direction. The primary concern is that contaminants can travel through the ground surface or a drain and enter surface water or groundwater.

1.5 Grinding, Sanding, and Filling

Grinding, sanding, and body filling are included together, since many of the risks and compliance steps are similar.

GREATEST RISKS

- Eye injuries and respiratory problems can occur from exposure to particulates, flak and dusts.
- Body filling can release volatile organic compounds (VOCs) and hazardous constituents that are in filler hardeners to the air. This can impact air quality, pose a potential respiratory hazard, or harm exposed skin.

BEST FIXES

- Wear health and safety gear such as goggles with side shields, respiratory protection, and gloves. [Use gloves when mixing a filler if advised to do so by the Material Safety Data Sheet (MSDS)].
- Provide adequate ventilation when mixing and applying body filler or when grinding and sanding.

HOW DO I COMPLY?

The *Dos and Don'ts* below will help you comply with air, water, hazardous waste, and health protection and fire prevention requirements. The *Cleaner and Safer Operation Tips* also can help you improve compliance and the *What Ifs* answer common regulatory questions.

GRINDING, SANDING, AND BODY FILLING DOS AND DON'TS

AIR

DO use a local exhaust system that you can place at the source of dusts. Portable systems are available. DO use filter systems to control dust inside the shop. Inspect filters regularly and replace them as needed.

See What If? section below to determine if you have any air compliance concerns from body filling. Normally, emissions from body filling operations are small, so the primary issue tends to be worker health and safety, rather than air compliance.

WATER

- DO keep your shop clean of dusts or metal filings from grinding and sanding operations. Waste from grinding and sanding can contain high concentrations of zinc and other heavy metals which can impact water quality if they are allowed to enter the environment.
- DON'T dispose of any fillers or hardeners with your wastewater stream.

HAZARDOUS WASTE

- DO manage waste fillers properly. Some of these materials may be a hazardous waste. For example, components of the fillers may be hazardous waste if the catalyst has not been added or if the filler has not hardened and is in a liquid or semi-liquid state.
- DO manage wastes carefully when stripping paint from older vehicles. Older paints can contain lead and other heavy metals that are hazardous.
- DON'T use power tools to strip paint from older cars.

HEALTH PROTECTION AND FIRE PREVENTION

- DO check each product's MSDS to see what type of gloves should be worn to protect your hands when working with a filler or hardener.
- DO read the MSDS for filling materials and follow MSDS directions regarding fire prevention. Some fillers may contain ignitable ingredients and should be kept away from ignition sources.
- DO wear protective eyewear with side shields when grinding and sanding.
- DO wear ergonomic gloves to protect hands and arms. Ergonomic equipment is designed to reduce physical stress on your body.
- DO consider wearing hearing protection. See Section 2.1.4 of the Toolbox for information on hearing protection.
- DO wear a particulate mask or respirator if regular ventilation does not provide adequate protection.
- DON'T allow dusts to build up inside the shop.
- DON'T apply synthetic filler near ignition sources if the filler is designated as ignitable.

CLEANER AND SAFER OPERATIONS TIPS

- For any activities that require the use of a respirator or mask, have each employee fit test the items to ensure they perform properly. The manufacturer and/or supplier of the items should provide you with the necessary instructions for fit testing. See Section 2.1.3 of the Toolbox for more information on fit testing.
- Ensure that adequate ventilation is available. Consider using a vacuum sander and/or a portable ventilation system to reduce dust exposure to workers. Excessive dust also can interfere with paint jobs and increase sweeping and cleaning labor.
- Consult with your jobber to find out what types of less-toxic filler materials or paint strippers are available. Fillers can contain a variety of materials, such as polyester resins, styrene, and titanium dioxide, that can be harmful if inhaled or if discharged into your sewer drains. Also, find out whether carbohydrate-based strippers or other biochemical systems are appropriate for your operations.
- If appropriate, implement strict materials usage practices (inventory control) to encourage maximum efficiency with raw materials and to improve inventory data. Make sure that all employees are trained to mix and use only the minimum amount of filler material necessary.

WHAT IF???

Q

Are there any air compliance requirements that apply to body filling activities?

A

Air regulations do not specifically address polyester resins and titanium dioxide that are contained in filling and hardening materials. Styrene (a known carcinogen), is used in fillers and is on the list of hazardous air pollutants (HAPs) regulated by the Clean Air Act. Auto body shops use only a small amount of styrene annually, so its use is not generally an air permitting concern. However, you need to control both the vapors and particulate emissions associated with body filling to protect worker health and safety—especially since hardeners may contain benzoyl peroxide, which is harmful to exposed skin (tumor promoting).

1.6 Spray Painting

GREATEST RISKS

- Inhaling paint vapors can have serious health impacts, resulting in worker illnesses, loss of productivity, worker compensation claims, and other problems.
- Improper mixing of coatings or management of solvents can generate excessive emissions of volatile organic compounds (VOCs) causing compliance problems, health hazards, or fire hazards.
- Paint and solvent vapors, unless properly managed, can lead to odor complaints by neighbors, enforcement actions by the local health department, and flammable or explosive conditions.

BEST FIXES

- Use the best paint spray booth or room that you can afford (with adequate capture and filtering). This will help to protect your employees, prevent emission of strong smelling vapors, and can improve the quality of the paint jobs that you produce.
- Change the filters in your spray enclosure as needed based on (1) manufacturer specifications or (2) your filter system's airflow gauge readings.
- Make certain that coating materials meet the Massachusetts regulatory requirements (see the table on next page). Don't "cocktail" your coatings (that is, don't mix them differently than directed by the manufacturer). This can impact VOC emissions and paint job quality.
- Train employees in proper health and safety precautions for handling paints, coatings, and solvents and in proper mixing and application procedures.

HOW DO I COMPLY?

The *Dos and Don'ts* below will help you comply with air, water, hazardous waste, and health protection and fire prevention requirements. The *Cleaner and Safer Operation Tips* also can help you improve compliance and the *What Ifs* answer common regulatory questions.

Remember: Massachusetts state law sets strict limits on the amount of VOCs that coating materials are allowed to contain. The table below lists the limits for various materials. Compliant coatings meet these limits when properly mixed and applied. To identify the amount of VOCs in a coating, check the label on the coating's container.

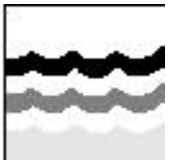
Type of Solution or Coating Material	VOC Limit (as applied)
Surface preparation solution	1.67 pounds VOC/gallon (lbs VOC/gal.)
Pretreatment wash primer	6.5 lbs VOC/gal.
Primer/primer surfacer	4.8 lbs VOC/gal.
Primer sealer	4.6 lbs VOC/gal.
Topcoat (single stage or basecoat/clearcoat)	5.0 lbs VOC/gal.
Three- or four-stage topcoat	5.2 lbs VOC/gal.
Specialty coating	7.0 lbs VOC/gal.

SPRAY PAINTING DOS AND DON'TS

AIR

- DO use ONLY compliant coatings as described above. Trying to "cocktail" or create your own mixtures may result in non-compliant finishes and wasted paints.
- DO use DEP-approved gun washers.
- DO use either high volume, low pressure (HVLP) or low volume, low pressure (LVLP) spray guns. The air pressure must be less than 10 pound per square inch (psi) at the air cap of the spray gun.
- DO train employees on how to operate and maintain equipment.
- DO keep purchase or use records for coating and solvent materials for the last 12 months to document your shop's air emissions. Your supplier may help by providing you with your purchase records on a regular basis.
- DO keep all new and waste solvents and coatings in tightly closed containers.
- DO regularly check air flow gauges on your spray enclosure so that you know when to replace the filters or change the filters as directed by the manufacturer.

WATER



- DO make sure that paint thinners and gun cleaning solutions are not poured down the drains. Manage these liquids as hazardous waste.

HAZARDOUS WASTE

- DO check whether rags are hazardous or nonhazardous under the "One-drop Policy." If you can squeeze out even one drop of solvent or paint from a used cleaning rag, then you must dispose of it as hazardous waste (see Section 2.1.2.C of the Workbook for more information).
- DO manage paint waste as a hazardous waste, when required.
- DO clean out empty cans with a spatula and allow any excess paint to dry before disposing of cans.
- DO manage waste solvent and thinners as hazardous waste (see Section 2.1.2.C of the Workbook for more information).
- DON'T mix different hazardous wastes such as paint waste and rags in the same container. It is more expensive to manage mixed wastes.

HEALTH PROTECTION AND FIRE PREVENTION

- DO wear personal protective equipment – a Tyvek® suit, a respirator, gloves and a hood. Certain coating products contain isocyanates and other chemicals. Exposure to these chemicals can lead to sensitization, respiratory problems, and other serious health problems, so protective equipment is important for your safety.
- DO make sure that your spray painting area is properly ventilated. Check filters used in the area regularly to make sure that they are working.
- DON'T set up electrical outlets, heaters, radios, fans or other non-explosion proof equipment within 20 feet of a spray painting area.
- DON'T apply coatings or paints near a source of fire or sparks (like a welding area).

CLEANER AND SAFER OPERATION TIPS

- Train all employees on the proper use of HVLP and/or LVLP spray guns, on the best spray painting techniques, and on the proper management of spray guns. In addition to being a smart business practice, this also is a Department of Environmental Protection (DEP) requirement for auto body refinishing. The manufacturer and/or supplier of your spray guns should be able to provide instructional materials (handbooks, videos) or even training sessions. Proper spray painting technique helps reduce paint use, offspray, overspray, and other problems that impact transfer efficiency, air quality, and paint job quality. Training

also is necessary to make sure that employees clean and manage spray guns with minimal solvent use and impacts on air quality. Providing this training may end up reducing your operating costs, by saving raw materials, cutting down on VOC emissions, reducing paint and solvent waste generation.

- Consider using a paint mixing system to ensure that only the necessary amount of paint is used. Mixing systems can help save money by reducing wasted paint. It is

  usually a good idea to use a single manufacturer's line of products. Substituting generic components can make it difficult (1) to know the total VOC content of the coating as it is applied or (2) to make sure the painting results will be covered by the paint manufacturer's warranty conditions.

- Contact your jobber or coatings manufacturer to find out about low-VOC coatings that can be used for auto body refinishing. New low-VOC coating technologies you may want to look for include:

  Water-based coatings, which contain minimal VOCs, may be applicable for some basecoats and primers. Auto body refinishers in California, Texas and New Jersey already use water-based undercoats and basecoats to meet state-specific VOC limits which are lower than current Massachusetts limits.

  New basecoats can provide adequate hiding using only about half the coating application volume of older basecoats. This reduces the VOC emissions for basecoat paint jobs by almost 50%.

  New clearcoats may use alternatives to traditional solvents. This can help reduce the VOC content of these clearcoats from around 6 lbs/gal. to 4 lbs/gal.

- Consider becoming a trial site for new technologies and techniques. Because refinishing technologies such as low-VOC coatings or improved application equipment are in constant development, becoming a trial site is a good way to keep up on new technologies and receive assistance in the implementation of new processes.

- Use an approved or enclosed gun washer to clean spray guns and other equipment and recycle used solvent. This is a Massachusetts DEP requirement. These gun washers (1) reduce solvent use, (2) reduce VOC emissions, and (3) reduce the labor hours needed to clean equipment. Contact your jobber for information on purchasing an approved gun washer or see Section 3.5.3 of the Toolbox for a list of equipment suppliers.

- Consider using spray cup liners and paint-line liners, which reduce the need to clean equipment during color changes or when significant lag times occur between applications. Some refinishers have reported a 2/3 reduction in solvent use for gun cleaning by using liners. You also might be able to designate one gun for primer coats, or otherwise avoid washing guns after each application. All of these activities help reduce solvent use, which cuts down on VOC emissions and saves money.

- Use a two-stage solvent cleaning process (dirty solvent for initial cleaning, followed by fresh solvent for a final rinse). This allows you to reuse cleaning solvents, and minimizes the amount of fresh solvent you need for each cleaning. Make sure to store reusable solvent in an airtight container, so that it does not evaporate.

- Allow painted materials to dry in the spray paint enclosure, to ensure that any vapors are filtered effectively. If this is not feasible, try to locate your drying area close enough to the enclosure so that the ventilation system may be extended to the drying area. Proper filtration for drying is important to reduce air emissions and prevent odor problems.
- Make sure that your spray paint enclosure is large enough and that the ventilation draft is strong enough to draw in all paint vapors. Insufficient size and ventilation capacity can allow fumes and emissions to spread into the rest of the shop. This can impact worker health, air quality, and odor.
- Store paints in a temperature-controlled area (NOT near an outside wall or direct sunlight). This helps avoid paint going bad during storage. (A standard fire-proof storage cabinet costs about $500-700).
- Save paint by cleaning out empty paint containers with a rubber spatula and scraping the excess paint into your next can. Once a container is scraped out, leave it to dry in the spray paint enclosure so that evaporating vapors are filtered. Containers with only dry paint residue can be disposed as regular trash.
- Consider recycling your used paint containers as sheet metal, rather than disposing of them in your regular trash. Clean and dry containers with the bottoms punched out (so that no water or other liquids can accumulate) are accepted by many scrap metal recyclers. Scrap sheet metal is recycled at a variety of locations across the state. Contact local scrap recyclers for more information, or call the Institute for Scrap Recycling Industries at (202) 737-1770.
- Provide excess paint to customers for touch-up jobs. Make sure the bottle is clearly labeled as paint, tightly sealed, and otherwise reasonably child-proof.

WHAT IF???

Q A

What if I don't know much about compliant coatings?

Massachusetts suppliers are required by law to sell compliant coatings. Contact your coatings supplier or a supplier listed in Section 3.5.1 of the Toolbox for more information.

Q A

What if a water-based paint doesn't work for my shop?

You should ask your supplier what paints are available and test them before you buy a large quantity of paint. Suppliers should work with you to identify when you can use water-based paints and not impact your paint job quality. Keep an eye out for new materials as manufacturers are developing new products all the time.

POLLUTION PREVENTION OPPORTUNITIES FOR SPRAY PAINTING OPERATIONS

Make sure that you ask your suppliers or trade contacts about these tips and test ideas before implementing them on a full-scale level.

PAINT AND COATING APPLICATION

- Always hold the paint spray gun perpendicular to the surface being sprayed, using parallel strokes to apply the paint.
- Reduce overspray during the painting process by maintaining a "50% overlap," a constant gun speed, and a constant distance from the surface to be painted, whenever possible.
- Feather trigger at the beginning and end of each pass.
- Reduce solvent waste generation by scheduling consecutive jobs which require the same coating color. This reduces solvent use for intermediary cleaning.
- Use water-based coatings, where feasible.

PAINT AND COATING PURCHASING AND USE

Prep Coats, Primer-surfaces, Primer-sealers, and Sealers

- Use epoxy or self-etching primers to help reduce the need for additional surface coating operations.
- Use a wash primer or metal conditioner conversion coating system.
- Use a minimal amount of surface primer. This can reduce VOC emissions, limit material costs, and achieve a better quality finish.
- If you choose to use a primer-surfacer, use a properly operating primer gun or urethane primers.
- Use low-VOC urethane primer-sealers, whenever possible.
- Always choose a primer-sealer of a color that can be easily covered with the coating to be sprayed, or choose a tintable primer-sealer. This reduces the amount of coating material needed to complete the paint job.

Topcoats

- Mix color coats in-house, making sure that the formula for the proper shade of the specific color code is used.
- When available, use waterborne basecoats, and limit the addition of paint additives.
- Use high solids/low VOC clearcoats on topcoat color coats.
- Choose low VOC topcoats that require fewer than three coats to achieve adequate coverage (polyurethane or urethane).
- Keep good records of paint match information, including spray-out cards. This prevents the need for stripping or repainting.

2 Health Protection and Fire Prevention Tool

A shop's most valuable resource is its employees. The Occupational Safety and Health Administration (OSHA) is responsible for developing and implementing requirements that protect you while you are at work. For auto body shops, health and safety concerns include issues such as (1) fires that can be caused by spray painting and welding activities and (2) potential exposure to chemicals that are used in your shop.

National Fire Protection Association (NFPA) requirements focus on protecting your workers, your shop, and your neighbors from fire hazards. State building and electrical code requirements also are designed to prevent hazards. Because OSHA, NFPA, and state requirements address similar areas, they are explained together in this section.

Health Protection and Fire Prevention requirements are discussed in some detail below because they are important to protecting your shop and its workers. The general order of the text below matches items in Section 3 of the Workbook (the Self-Assessment Checklist) so that you can find things more easily.

2.1 HEALTH PROTECTION REQUIREMENTS

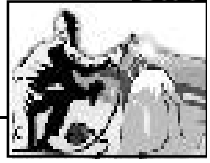
This section discusses health protection (primarily OSHA) requirements that apply to auto body shops. The health and safety information provided here is only a summary of the major requirements and is not an all-inclusive discussion of OSHA rules and regulations.

If you have questions concerning OSHA regulations, you can call the Massachusetts OSHA Consultation Program for help at (617) 969-7177. Its services are free and can include site visits to your shop to review your OSHA compliance and provide you with tips that will help you comply with the law.

This section provides information regarding items listed in Section 3 of the Workbook.

2.1.1 Hazard Communication Program (Section 3, Item 58 of Workbook)

Auto body shops need to (1) make employees aware of the dangers of the hazardous chemicals that are present in the shop and (2) provide directions on how to handle these chemicals safely. It is the responsibility of the shop owner or manager to make this information available to workers. To make sure that you address this area, OSHA's Hazard Communication Standard requires that you have a written Hazard Communication Program which does the following:



- lists all hazardous chemicals that are used and stored in the shop,
- identifies individuals that are responsible for worker safety,
- describes the labeling system used to identify containers in your shop,
- describes how employees will be informed of the physical and chemical hazards involved with routine and non-routine tasks,
- describes your employee training program, and
- describes your system for obtaining, maintaining, and making available material safety data sheets (MSDS) for all hazardous chemicals in your shop (see MSDS description below).

What is an MSDS? (Section 3, Item 59 of Workbook)

An MSDS, or ***material safety data sheet***, is an important tool for training employees in the safe handling of hazardous chemicals. Chemical manufacturers are required to provide MSDSs for the materials that they produce. Your material supplier must provide MSDSs to you when you buy supplies. You must ask for the MSDS when you change materials or products, so that you keep your records and your employees up to date.

The auto shop owner is responsible for obtaining MSDSs for the hazardous materials that are present in his or her shop, training employees regarding the availability and uses of MSDSs, and making the MSDS available to employees. Your employees should be trained in how to (1) use an MSDS, (2) read about the chemicals they are using, and (3) protect themselves appropriately when using these substances to perform their job function.

Major areas addressed in an MSDS include the following:

(1) identification information, such as the product name and chemical formula,

(2) the material's hazardous components and hazards,

(3) the material's physical data (VOC content, vapor pressure, flash point, appearance, odor),

(4) the material's fire and explosion hazards,

(5) reactivity data for the material (that is, whether it is stable or unstable),

(6) procedures to follow for material leaks, spills, and disposal,

(7) protective equipment to use for the material,

(8) storage and handling precautions,

(9) emergency and first aid procedures for the material, and

(10) transportation requirements for safely shipping the material.

To help you prepare your shop's Written Hazard Communication Program, we have provided a sample that you can use as a starting point for your own program. Please note that the sample is just an EXAMPLE. You should create a program that makes sense for your shop. If an inspector visits your shop, he or she will want to see a plan that YOU developed for YOUR shop - not a generic plan that does not address the specifics of your shop.

WRITTEN HAZARD COMMUNICATION PROGRAM EXAMPLE

General Company Policy

The purpose of this notice is to inform you that our company is complying with the Occupational Safety and Health Act (OSHA) Hazard Communication Standard, Title 29 Code of Federal Regulations 1910.1200, by compiling a hazardous chemicals list, by using MSDSs, by labeling containers, and by providing training to all of our employees.

This program applies to all work operations in our company where you may be exposed to hazardous substances under normal working conditions or during an emergency situation.

The health and safety officer (HSO), Mr. Frank Johnson, is the program coordinator who has overall responsibility for the Hazard Communication Program. Mr. Johnson will review and update the program as necessary. Copies of this written program may be obtained from Mr. Johnson in the Health and Safety Office, Room B3.

After Hazard Communication Program training, you will understand the hazardous properties of chemicals with which you work, safe handling procedures, and measures that you will take to protect yourselves from these chemicals. You also will understand the hazards associated with (1) non-routine tasks, and (2) chemicals in unlabeled pipes.

List of Hazardous Chemicals

The HSO will make a list of all hazardous chemicals and related work practices used in the facility, and will update the list as necessary. Our list of chemicals identifies all of the chemicals used in our ten work process areas. A separate list is available for each work area and is posted by that area's entrance. Each list also identifies the corresponding MSDS for each chemical. A master list of these chemicals will be maintained by Mr. Johnson and is available in Room B3.

Material Safety Data Sheets (MSDSs)

MSDSs provide you with specific information on the chemicals that you use. The plant manager will make sure that each work site maintains MSDSs for hazardous materials used or produced in that area. MSDSs will be made readily available to you at your work stations during your shifts.

The HSO is responsible for acquiring and updating MSDSs. He will contact the chemical manufacturer or vendor if additional research is necessary or if an MSDS has not been supplied with an initial shipment. All new procurements of hazardous materials must be cleared by the HSO. A master list of MSDSs is available from Mr. Johnson in Room B3.

Labels and Other Forms of Warning

The HSO will ensure that all hazardous chemicals in the plant are properly labeled and updated, as necessary. Labels should list *at a minimum* the chemical identity, appropriate hazard

warnings, and the name and address of the manufacturer, importer or other responsible party. To assist you in verifying label information, the HSO will refer to the corresponding MSDS. Containers that are shipped from the shop will be checked by the shipping and receiving supervisor to make sure that all containers are properly labeled.

If there are a number of stationary containers within a work area that have similar contents and hazards, signs will be posted to convey the hazard information. On our stationary process equipment, regular process sheets, batch tickets, blend tickets, and similar written materials will be substituted for container labels when they contain the same information as labels. These written materials will be posted and made available to you at any time during your work shift.

If you transfer chemicals from a labeled container to a portable container that is intended only for your immediate use, no labels are required on the portable container. Closed pipes or piping systems will not be labeled, but their contents will be described in regular training sessions.

Non-Routine Tasks

When you are required to perform hazardous non-routine tasks (for example, cleaning tanks or entering confined spaces), a special training session will be conducted to inform you about the hazardous chemicals or situations to which you might be exposed and the proper precautions to reduce or avoid exposure or accidents.

Training

Every employee who works with, or is potentially exposed to, hazardous chemicals will receive initial training on the Hazard Communication Standard and the safe use of those hazardous chemicals. A program consisting of both audiovisual materials and classroom-type training has been prepared for this purpose. Whenever a new hazard is introduced, additional training will be provided. Regular safety meetings also will be used to review the information presented in the initial training. Supervisors will be trained extensively regarding hazards and appropriate protective measures so that they will be available to answer questions from employees and to monitor safe work practices on a daily basis.

The training plan will emphasize these items:

- Chemical and physical properties of hazardous materials (like flash point and reactivity) and methods that can be used to detect the presence or release of chemicals (including chemicals in unlabeled pipes),
- Physical hazards of chemicals (like the potential for fires or explosions),
- Health hazards, including signs and symptoms that are associated with exposure to chemicals and any medical condition known to be aggravated by exposure to the chemical,

- Procedures to protect against hazards (by using and maintaining required personal protective equipment; implementing safe work practices to assure proper use and handling of chemicals; and knowing emergency procedures in case an accident occurs),
- Work procedures to follow to assure protection when cleaning hazardous chemical spills and leaks,
- The location of the MSDSs, how to read and interpret the information on both labels and MSDSs, and how employees may obtain additional hazard information.

The HSO will review our employee training program and advise the shop manager on training or retraining needs. Retraining is required when the hazard changes or when a new hazard is introduced into the workplace, but it will be company policy to provide training regularly in safety meetings to ensure the effectiveness of the program. To evaluate the training program, the HSO will get input from employees regarding the quality of the training and areas for improvement.

Contractor Employers

Upon notification by the responsible supervisor, the HSO will advise outside contractors in person of any chemical hazards that may be encountered in the normal course of their work on the premises, the labeling system in use, the protective measures to be taken, and the safe handling procedures to be used. In addition, the HSO will notify these individuals of the location and availability of MSDSs. Each contractor bringing chemicals on-site must provide us with the appropriate hazard information on these substances, including the labels used and the precautionary measures to be taken in working with these chemicals.

Additional Information

All employees, or their designated representatives, can obtain further information on this written program, the hazard communication standard, applicable MSDSs, and chemical information lists at the Health and Safety Office, Room B3.

2.1.2 Personal Protective Equipment (PPE) (Section 3, Item 60 of Workbook)

OSHA requires that you (1) evaluate your activities to determine if PPE is needed; (2) train employees to use PPE, if necessary; and (3) document these efforts. PPE is the second line of defense after appropriate engineering controls.

A. HAZARD ASSESSMENT

Each shop owner must determine what activities in the shop require the use of PPE. To do this, you must review your shop's activities, material use (using the MSDSs), and hazard communication

program, and then prepare a *written hazard assessment*, certifying that the activity work area was checked, the date that it was checked, and the name of the person who performed the check.

Auto body shops generally require PPE such the following:

Activity	Personal Protective Equipment
Vehicle Dismantling	Cut resistant gloves, protective foot-wear, eye protection, hearing protection
Frame Work and Structural Work	Cut resistant gloves, ANSI-approved impact-resistant eye protection with side shields, hearing protection
Cutting and Welding	Gloves, goggles, face shield
Grinding, Sanding and Filling	Respirator, eye protection, cut resistant gloves or chemical resistant gloves (for work with fillers), hearing protection (for grinding work)
Spray Painting	Respirators, eye protection, protective clothing, gloves

For additional help in conducting a Hazard Assessment for your shop, call the OSHA Consultation Program at (617) 969-7177.

B. TRAINING

If activities in a shop require PPE, the shop owner or operator must train employees that work in these activities in the following areas:

- when PPE must be worn;
- what PPE must be worn;
- how to properly put on, take off, and adjust the PPE;
- what protection the PPE offers and what its limits are;
- how long the PPE can be used before it must be replaced; and
- how to care for, maintain, and dispose of the PPE.

OSHA also requires a *written certification of PPE training*.

To make this certification easier, you may want to complete a simple, but comprehensive policy on PPE for your shop, called a PPE Written Program. We have included an example written program below. **Note**: A separate written program is required for respiratory protection (see Section 2.1.3).

PPE WRITTEN PROGRAM EXAMPLE

General Policy Statement

It is the policy of (Company Name) that whenever possible, hazards at the workplace will be controlled using methods other than personal protective equipment. More desirable methods include elimination of a hazard (for example, by using of a less toxic material) or engineering controls (such as ventilation controls). Personal protective equipment (PPE) will be used only when there is no feasible alternative to control the hazard. All PPE that is required will be provided, maintained, and paid for by the Company.

Selection of PPE

In accordance with OSHA requirements, a hazard assessment will be done for each work area or operation within the Company in order to determine if PPE is needed and, if so, what type of PPE is needed. A copy of all written hazard assessment certifications is attached. (Name) is responsible for assessing the need for PPE and determining the type of PPE required for each hazard. All PPE will be selected in accordance with the current OSHA standards that require that PPE meet American National Standards Institute (ANSI) standards. Appendix B of the OSHA Standard provides guidance for selecting PPE. A copy of Appendix B is attached for your review. [*Note: The standard is not provided with this example.*]

Maintenance of PPE

(Name) is responsible for maintaining PPE at this Company. If PPE is in need of repair, cleaning or replacement, (Name) should be contacted. Any PPE that is damaged or in need of cleaning should not be worn. Replacement PPE will be issued promptly.

Training

All employees who are required to wear PPE must be properly trained and must demonstrate an understanding of (1) when and what PPE is required, (2) how to wear PPE, (3) limitations and proper care of PPE, and (4) the maintenance, useful life, and disposal of PPE. A written training certification will document employee training. Written training certifications are attached. (Name) is responsible for all PPE training. Training will be repeated as necessary.

Written Certification of Workplace Hazard Assessment

This is to certify that ____(Name)___ has evaluated __(Work Area or Operation evaluated)__ on (Date) in order to determine if PPE is required and, if so, what specific type is required.*

The following PPE is required for this operation or work area:

PPE REQUIRED	SPECIFIC TYPE OF PPE	HAZARD (to be protected against)

*Statements equivalent to these items are required by the PPE Standard.

Certifications of Training in the Use of PPE

The following employees have been trained by ____(Name)___ on the following subjects:

(1) when PPE is required;

(2) what PPE is required;

(3) how to properly put on, take off, adjust, and wear the required PPE;

(4) limitations of the required PPE; and

(5) the proper care, maintenance, useful life and disposal of the required PPE.

All employees that were trained have demonstrated an understanding of the above information.

Work Area/Operation	Employee Trained*	Date of Training*

*Statements equivalent to these items are required by the PPE Standard.

2.1.3 Respiratory Protection Program (Section 3, Item 62 of Workbook)

OSHA requires that you have a Respiratory Protection Program to protect your workers from damage that can occur from inhaling dusts or exposure to chemicals over time. Proper ventilation is the first step in protecting the respiratory health of workers. To ensure proper ventilation, OSHA requires that a well-ventilated spray enclosure and functioning exhaust system be present in every auto body shop.

The OSHA Respiratory Protection Program requires (1) a written respiratory protection program; (2) fit testing and fit checking for respirator users; (3) medical screening for respirator use; and (4) training.

A. Written Respiratory Protection Program

Because of the short- and long-term health problems that can result from unprotected exposure, OSHA also has developed requirements for a written Respiratory Protection Program if respirators are used at your shop. This program should include:

- a designated and qualified program administrator;
- an assessment of respiratory hazards;
- selection of appropriate National Institute for Occupational Safety and Health (NIOSH) respirators for the hazards that are present;
- a medical evaluation and documentation that it is safe for your worker to use a respirator; and
- respirator training and availability for each worker that needs it.

B. Qualitative Fit Tests and Fit Checks

Employees should do a **Qualitative Fit Test** before they use a respirator for the first time and annually after the first test to make sure that the respirator fits properly and does not leak. Follow the *Respirator Dos and Don'ts* outlined below.

Table 1 - Respirator Dos and Don'ts

DO...	DON'T...
Conduct a fit test when a worker is clean-shaven.	Use a face-fitting respirator for a worker with facial hair.
Try the respirator with safety glasses on.	Use different parts of more than one respirator at one time.
Try different sizes or brands of respirators.	Forget to clean, rinse, and air dry your respirator after each use.
Regularly check the face piece for defects.	Leave your respirator on the shelf; it won't protect you there.
Use the right respirator for each hazard.	Use a cartridge longer than is safe. That's like not wearing a respirator at all.
Store the respirator in a clean, sealed bag.	Forget to check the respirator for cracks, tears, missing parts, etc., before you use it.

To make sure the respirator fits tightly and is protective, do the following: (1) a qualitative fit test, (2) a negative pressure check, and (3) a positive pressure check. A negative or positive pressure check should be done every time you put on your respirator.

A **Qualitative Fit Test**[1] can be conducted using one of several substances, such as: saccharin, aerosol irritant smoke, or banana oil. Once the respirator and the appropriate cartridge are put on, expose the employee to the substance. The respirator passes the test if the employee can NOT smell the test substance.

To conduct a qualitative fit test while using a respirator with High Efficiency Particulate Air (HEPA) filter cartridge(s), adjust the respirator to your face and keep your eyes closed. Have the safety officer or equipment supplier release an irritant smoke from two feet, then six inches, from your face, directing the smoke over the front and sides of the respirator. If you detect any smoke penetration (that is, irritation), inspect the respirator for defective valves or loose cartridges, adjust, and test for penetration again. If you do not detect any irritating smoke, perform the following exercises while directing the irritant at potential points of leakage in the respirator face seal to make sure the fit is tight:

- Normal breathing
- Turning head from side to side
- Deep breathing
- Talking
- Nodding head up and down
- Smiling

To test the fit of a respirator using organic vapor cartridge(s) - put the respirator on with the organic vapor cartridge(s) and have the safety officer use isoamyl acetate (also known as banana oil). This is usually sprayed inside a contained area like a plastic shield. If you can smell the banana oil scent inside the respirator, you do not have a tight seal.

A **Fit Check** consisting of a negative and positive pressure check should be done each time an employee uses a respirator. To conduct a **negative pressure check**, adjust the respirator, cover the inlet openings of the respirator cartridge(s) with your hands, inhale gently, and hold your breath for 10 seconds. If the face piece collapses slightly and no air leaks into the face piece, you can assume that the seal is adequate. If not, readjust the face mask or head straps and repeat the procedure - or try another size or brand of respirator.

To conduct a **positive pressure check**, adjust the respirator, cover the outlet opening of the exhalation valve with your hands, and exhale gently. If the face piece bulges slightly and no air leaks out of the face mask, assume that the seal is adequate. If not, readjust the face mask or head straps and repeat the procedure - or try another size or brand of respirator.

[1] *See the Mandatory Fit Test appendix of the OSHA Respirator Standard (CFR 1910.134) for complete details of fit test procedures.*

Finally, employees should be screened to make sure they have no health problems that would make using the respirator unsafe. They also must be trained to use this equipment (see section 2.1.2).

2.1.4 Hearing Protection Program (Section 3, Item 63 of Workbook)

Hearing protection is an important issue in your shop, even if individual noises do not seem loud to you. Hearing damage can occur over time, in addition to occurring in response to high decibel (dB), one time noises.

It is important to invest in hearing protection to prevent short- and long-term hearing loss. The use of ear plugs, ear muffs, or other hearing protection aids can decrease the impact of shop noise levels on the inner ear dramatically. This helps protect worker hearing. Hearing loss from high noise levels at work is covered by worker's compensation and is generally classified as a permanent, partial disability.

Your Hearing Protection Program should ensure that workers are not exposed to greater than an average decibel (dBA) level of 85 without the availability of hearing protection. The table below compares the noise levels of common activities inside and outside of the workplace to give you a starting point in assessing noise levels in your shop. Again, you must be concerned about the average noise level (8-hour time weighted average or average over an 8-hour work day), and protect your workers based on that exposure. As a rule of thumb, if you are at arms distance from someone and you have to raise your voice to be heard, the noise level is probably above 85 dB. If noise levels exceed 85 dBA when averaged over an 8-hour day, workers must be given a baseline hearing test, annual hearing tests and hearing protection training. Call the OSHA Consultation Program for help in noise level testing.

Remember: noise that causes hearing loss is not necessarily painful. You may not feel pain but you can still suffer hearing loss over time.

"How Loud is Loud?"

Description of Noise	Noise Level in Decibels (dB)
Average whisper	20
Ordinary conversation	65+
Traffic on busy street	68
Riveter (from a distance of 35 feet)	97
Hammer blows on steel a plate (from a distance of 2 feet)	114
Pain threshold	130

Your Hearing Protection Program should make sure (1) that you have the right equipment to protect employee hearing, (2) that employees understand the importance of using this equipment, and (3) that employees are trained in the proper use of this equipment when performing their day-to-day work activities.

2.1.5 Eye And Skin Protection

Eye and skin protection are required in many situations in an auto body shop and are addressed under the Hazard Communication and PPE Program requirements addressed above (Sections 2.1.1 and 2.1.2, respectively). Because eyes and skin are so important and easy to harm, we are providing some specific tips for eye and skin protection in your shop.

A. Eye Protection

Face fitting goggles with splash-proof sides and fog-free lenses must be worn for chemical hazards. Eye protection does not have to have splash-proof sides for particle hazards, but should have side shields. Goggles should be cleaned after each use in accordance with the manufacturer's directions. Also, OSHA requires that varying degrees of shaded lenses be used with goggles or face shields for different welding operations (See the table below).

Appropriate Lenses for Welding Operations

Welding Operation	Shade Number
Shielded metal-arc welding electrodes < 3/16 inch (MIG)	10
Gas-shielded arc welding-electrodes < 3/16 inch (MIG)	12
Shielded metal-arc welding, 3/16 inch to 1/4 inch electrodes (MIG)	12
Soldering	2
Torch Brazing	3 or 4
Light cutting up to 1 inch	3 or 4
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 2 inches	5 or 6
Gas welding (heavy) 2 inches and over (and plasma cutting)	6 or 8

IMPORTANT: Because chemical accidents may happen even when you are careful, your shop must have one or more eye wash stations that are working and located within 100 feet of potential hazards that can provide up to 15-minutes of continuous water flow to both eyes in case of a accident (Section 3 of Workbook, Item 61).

B. Skin Protection

Gloves should be worn during activities where chemicals can contact the hands and lower arms or to prevent cuts or burns when sharp or hot objects are handled.

The type of gloves (latex, nitrile, PVA, etc.) that you should use depends on the type of hazards you face. For hazardous chemicals, check the MSDS for directions or check with your glove or material supplier to find out which

glove type is recommended when handling each chemical. You must check on glove types for each new material that you use. No single type of glove is right to handle all chemicals.

Employees should be trained in (1) proper procedures for putting on and taking off gloves, and (2) secondary protection procedures such as taping up, using barrier creams, or wearing two pairs of gloves.

2.2 FIRE PREVENTION REQUIREMENTS

This section addresses fire prevention requirements of the state, NFPA, and OSHA, as they are closely related. The important thing is to understand the reason for the requirements and to make sure that your shop complies with them so that you and your workers, your shop, and your neighbors are protected from fire hazards that may be associated with spray painting, flammable materials storage, paint storage and mixing, and electrical and other equipment in your shop.

2.2.1 Spray Painting Areas

OSHA requires that spray painting takes place in a spray painting enclosure, like a spray booth or a spray room. A spray booth is a large or small area with three walls and one open side and is designed to contain overspray material and chemical vapors. A spray room has four walls and a door. Spray enclosures and surrounding areas must meet specific requirements that are covered in Section 3 of the Workbook, the Self Assessment Checklist (Items 67 through 85).

2.2.2 Flammable Storage

OSHA requires the use of a flammable storage room, outdoor storage building, or flammable storage cabinet when certain amounts of flammable liquids (paints and coatings) are stored in one fire area. A fire area is an area of a building separated from the rest of the building by a wall that has a one-hour or greater fire resistance rating. Most auto body shops will require a flammable storage cabinet; see Section 3 of the Workbook (Items 80 through 82).

2.2.3 Construction of Paint Storage and Mixing Rooms

OSHA, NFPA, and the state have developed specific construction requirements for paint storage and mixing rooms. These requirements specify the ventilation, construction materials, and dimensions of the rooms. To review the requirements for the construction of paint storage and mixing rooms, see the Section 3 of the Workbook (Flammable Storage, Items 80 through 83) and (Mixing Rooms, Items 84 and 85).

2.2.4 Equipment and Electrical Requirements

The location of your spray finishing equipment and the spray enclosure, as mentioned above, are critical to the health and safety of the employees. Because of the hazards associated with flammable

liquids in auto body shops, OSHA, NFPA, and state requirements outline electrical requirements that apply to paint storage and spray painting areas. For instance, all wiring inside your shop should be spark-proof, and all equipment, exhaust ducts, and piping systems must be electrically grounded (Section 3 of the Workbook, Item 74). Investigations of the spray enclosure installation and the ventilation system by a certified electrician and a heating, ventilation, and air conditioning (HVAC) engineer also are required.

2.2.5 Other Fire Prevention Requirements

Like OSHA, the NFPA requires that fire safety equipment (like fire extinguishers and sprinkler heads) be maintained and be tested periodically to ensure it is working. Also, all spray painting equipment that conveys combustible liquids or aerated solvents must be permanently grounded. Building codes also require that your shop have a sprinkler system and explosion-proof lights. It is important that all emergency preparation procedures and safety precautions be outlined in your shop's contingency or emergency plan, see Items 86, 89, and 91 of the Checklist in Section 3 of the Workbook.

2.2.6 Fire Prevention, Emergency, and Contingency Planning Requirements

U.S. Environmental Protection Agency, OSHA, NFPA, and state requirements include planning requirements so that you are prepared to address a fire, explosion, or spill of hazardous material into the environment.

If such an event happens, you and your co-workers must be able to respond quickly and safely. Depending on the amount of hazardous waste stored or generated at your shop, you are required to develop either (1) a written contingency plan (large quantity generators), or (2) an emergency plan (small and very small quantity generators). A contingency plan must address the following areas:

- any steps needed to prevent, contain, and control the release of materials from your shop,
- notification requirements and plans to report incidents to local emergency response agencies (police, fire, and hospital),
- any evacuation procedures that would be required to protect the health and safety of workers inside the shop as well as those in the surrounding community.

A CONTINGENCY PLAN or EMERGENCY PLAN must contain or describe the following elements:

- name of the designated emergency coordinator and the telephone number at each work area where hazardous waste is being generated,
- alarm or communication system for alerting those in the shop,

- telephone, two-way radio, or other communication to contact emergency response teams,
- portable fire extinguishers and fire control equipment,
- automatic fire suppression (sprinklers) and adequate water supply and pressure or foam-producing equipment,
- clearly marked exits,
- plan for instructing employees on emergency procedures,
- emergency phone numbers and evacuation plan clearly marked and posted,
- notification of emergency response agencies of the location of the shop and information regarding the nature of the chemicals and wastes that are used and stored, and
- spill control materials and procedures for their use.

Fire prevention, emergency, and contingency planning requirements are addressed by Items 86 through 91 in Section 3 of the Workbook.

Don't view any of these emergency or protective requirements as only a paper exercise. These requirements were designed to protect you, your workers, your shop, and your neighbors. Having these plans and procedures in place can help reduce (1) your risk of accidents occurring and (2) the impacts of an accident, if one occurs.

3 Resources, Forms, and Other Tools

This section provides information regarding additional tools that you can use to get more information, ask questions, or speak with agencies and organizations involved with the *CRASH Course* project.

Section 3.1 lists important telephone numbers for Hotlines that address hazardous waste management, spill reporting, and regulatory questions.

Section 3.2 lists specific contact information for the various permits, licenses and forms your shop may need to comply with the basic environmental, health, and safety requirements.

Section 3.3 lists the contact information for each of the *CRASH Course* partner agencies and organizations.

Section 3.4 lists additional agencies and organizations that have been involved in the development of the *CRASH Course* project or that can provide information related to the requirements described in this manual.

Section 3.5 provides a list of vendors that you may wish to contact for more information on equipment and materials described in this manual.

Section 3.6 provides labels, forms, and other example materials.

3.1 HOTLINES

The hotlines listed below should be used to report spills, possible violations, or get quick answers to regulatory concerns.

Hazardous Waste Management Hotline:

(617) 292-5898

For information about hazardous waste management and compliance.

Spill Reporting (used oil or hazardous material):

(617) 556-1133 Boston Area

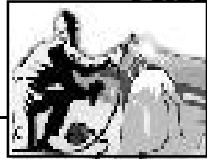
(888) 304-1133 Toll-Free from anywhere in Massachusetts

To report spills of used oil and hazardous material.

Environmental Strike Force:

(888) VIO-LATE Toll-Free from anywhere in Massachusetts

To report illegal dumping or other environmental violations.



Drop a Dime on Environmental Crime:

(617) 343-4991

To report an environmental crime in the Boston area.

Used Oil:

(617) 556-1022

MA DEP Air Quality:

(800) 882-1497

Title 5 (Septic Systems):

(800) 266-1122

(617) 292-5886

InfoLine (Permitting Information):

(800) 462-0444

(617) 338-2255

For other questions and concerns relating to used oil, air regulations, septic systems, and permits.

Fair Labor and Business Practices (Office of the Attorney General):

(617) 727-3465

Hotline to report violations of workplace safety practices.

3.2 PERMIT, LICENSE, AND REGISTRATION CONTACTS

The following contacts can provide information regarding permits, licenses, and registrations that are discussed in Section 2 of the Workbook. Where local agencies are the appropriate contact, you should check your local telephone book for their contact information.

A. Local Town or City Hall

Contact local officials at your Town or City Hall for information on the following:

(1) Occupancy Permit (usually handled by one or more local Code Enforcement Agencies)— and additional permits, including Flammable Storage Permits that are included in the Occupancy Permit application process.

(2) Local Business Registration with your Town or City.

Your town or city agencies should be contacted about vehicle storage permits for indoor and outdoor vehicle storage.

B. State Agencies

Massachusetts Division of Transportation (DOT)
100 Cambridge Street, Suite 1203
Boston, MA 02202
Phone: (617) 305-3559

Contact DOT to obtain a police-ordered towing license, if you perform police-ordered towing.

Massachusetts Division of Standards (DOS)
1 Ashburton Place
Boston, MA 02202
Phone: (617) 727-3480

Contact the DOS for information on how to register your shop with the state. In order to register, you will need to address the requirements for: (1) a federal tax identification number, (2) a state tax registration number, (3) a Surety Bond, (4) a Workers' Compensation Policy, and (5) an Appraiser's License.

Massachusetts Department of Environmental Protection (DEP)

Main Office
1 Winter Street
Boston, MA 02108
Phone: (617) 292-5500
Fax: (617) 292-5778
<http://www.magnet.state.ma.us/dep/home>

Central Regional Office
627 Main Street
Worcester, MA 01605
Phone: (508) 792-7650

Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347
Phone: (508) 946-2714

Northeast Regional Office
205A Lowell Street
Wilmington, MA 01887
Phone: (978) 661-7600

Western Regional Office
436 Dwight Street
Springfield, MA 01103
Phone: (413) 784-1100

Contact the DEP for information on the following requirements, permits, and forms:

Air Requirements

Volatile Organic Compound (VOC) Requirements - If you do not meet the criteria for exemption from these requirements in Section 2.1.1.A of the Toolbox, you will need to obtain one or more of the following forms (available at http://www.magnet.state.us/dep/appkits/forms.htm#98):

- Air Limited Approval Plan, Non-major Comprehensive Plan Approval, and Comprehensive Plan Approval (website forms BWP AQ 01, 02, 03, respectively).
- Supplemental Form for Paint Spraying and Surface Coating (website form under BWP AQ SFP-1).
- Source Registration Form (if you are a large source, the DEP will mail this form to you).

Motor Vehicle Air Conditioning (MVAC) Requirements - under the Clean Air Act (CAA). There are a number of U.S. Environmental Protection Agency (EPA) registration and certification

requirements for technicians and equipment. You can obtain a package summarizing these requirements, EPA-approved training and equipment suppliers, and standard certification forms by calling (800) 296-1996.

WATER REQUIREMENTS

You probably will not require forms from the DEP for wastewater discharges. You may require a local Publicly Owned Treatment Works (POTW) discharge permit if you discharge to a sanitary sewer that leads to your local POTW. Implement the practices described in Section 2.1.2.B of the Workbook (Vehicle Washing) to demonstrate your efforts to comply with water requirements.

HAZARDOUS WASTE REQUIREMENTS

Based on your generator and recycling status, you may need some of the following forms:

DEP One-Time Notification Form – call the DEP Hazardous Waste Management Hotline for more information at (617) 292-5898.

Hazardous Waste Identification Number Application Form – contact the DEP Hazardous Waste Management Hotline for more information at (617) 292-5898.

Class A Recycling Permit Application for Waste Oil – this is required if you recycle waste oil on site (provided on the DEP website under BWP HW 21).

Hazardous Material Label – an example label is provided later in this section (see Section 3.6).

Spill Release Report Form – an example form is included in Section 3.6.

In addition, these other tools may be useful to you:

(1) A Summary of Requirements for Small Quantity Generators (SQG) of Hazardous Waste, Updated April 1998, DEP - available at http://www.magnet.state.ma.us/dep/bwp/dhm/files/sqmsum. This is a 16-page summary of major requirements for SQG and VSQG hazardous waste generators.

(2) SQG Video - a 14-minute, friendly message regarding the importance of proper waste management. It is available to be borrowed for free for a 2-week period by calling (617) 292-5898. You can buy it by mailing a check for $9.50 with a form available at http://www.magnet.state.ma.us/dep/bwp/dhm/files/video.htm. It is a good tool for training your employees too!

(3) DEP policies regarding waste management, including:

Waste Management Guidance for Industrial Wipers and Sorptive Minerals Contaminated with Waste Oil (Policy) - HW 93-01. Available by calling (617) 292-5898.

Policy for Industrial Wipers [Rags] Contaminated with Solvent - HW 94-015. Available by calling (617) 292-5898.

Management Requirements for Hazardous Waste Batteries Intended for Recycling - BWP 95-005. Available by calling (617) 292-5898.

Policy for Management of Used Oil Filters - HW 93-02. Available by calling (617) 292-5898.

You also can use the DEP website to download copies of forms and documents listed above. Go to the following address to find them:

<http://www.magnet.state.ma.us/dep/appkits/forms.htm> OR

You also can call the DEP Information line at (617) 338-2255 (Boston area) or (800) 462-0444 (outside Boston) for more information.

3.3 *CRASH COURSE* MANUAL SPONSOR CONTACTS

The following contacts supported development of this manual and can provide additional information and assistance to you:

Massachusetts Auto Body Association (MABA)

Contact: Evangelos "Lucky" Papageorg
2100 Washington Street, Suite #2
Hanover, MA 02339
Phone: (781) 871-2809 or (800) 487-6222
Fax: (781) 848-6972
E-mail: lukeme@rocketmail.com
Internet: http://www.itsmaba.com

MABA provides technical and regulatory support to auto body shops. The association is supported by its members.

Massachusetts Office of Technical Assistance for Toxics Use Reduction (OTA)

Massachusetts Executive Office of Environmental Affairs
100 Cambridge Street, Room 2109
Boston, MA 02202
Phone: (617) 626-1060
Fax: (617) 626-1095
Internet address: <http://www.magnet.state.ma.us/ota/ota.htm>

For answers to regulatory questions, on-site technical assistance, and information on pollution prevention.

U.S. Environmental Protection Agency (EPA), Region 1 New England

JFK Federal Building
One Congress Street
Boston, MA 02203
Phone: (617) 565-3420
Internet address: <http:\\www.epa.gov\region01>

For help in contacting a specific individual at EPA Region 1 New England by phone.

EPA Region 1 New England Environmental Assistance Team (NEEAT) Assistance Line
Phone: (800) 90N-EEAT
Internet address: <http://www.epa.gov/region01/steward/neeat/>

For technical assistance and compliance support for industries and shops in New England. NEEAT can visit your shop and will provide suggestions to help you improve your compliance and reduce your waste. This assistance is confidential, free, and is offered to a limited number of shops each year. Also, NEEAT has prepared fact sheets to help auto body shops comply with vehicle air-conditioning work requirements, best management practices, and pollution prevention approaches. Each year, NEEAT hosts free technical assistance workshops targeting specific industry groups. NEEAT also can provide you with information on financing for eco-efficiency projects.

Massachusetts Office of the Attorney General
200 Portland Street
Boston, MA 02114
Phone: (617) 727-2200
Internet address: <http://www.magnet.state.ma.us/ag/ago.htm>

For information about legal matters in the Commonwealth of Massachusetts.

Massachusetts Department of Environmental Protection (DEP) - Main Office
1 Winter Street
Boston, MA 02108
Phone: (800) 462-0444 (Information Line from anywhere in Massachusetts)
Internet address: <http://www.magnet.state.ma.us/dep>

For compliance questions and information about DEP regulations and permit requirements.

Department of Labor and Workforce Development
Division of Occupational Safety -
Occupational Safety and Health Administration (OSHA) Consultation Program
1001 Watertown Street
West Newton, MA 02165
Phone: (617) 969-7177

Provides businesses with free, non-enforcement, consultation and technical assistance services related to occupational safety and health issues.

3.4 OTHER RESOURCES

This section lists other resources that can provide: (1) answers to regulatory questions, (2) technical assistance, or (3) information regarding financial resources that may be available to your shop.

A. National Resources

EPA Stratospheric Ozone Protection Hotline
Phone: (800) 296-1996
Internet address: <http://www.epa.gov/ozone>

For information on ozone depletion concerns and regulatory requirements related to motor vehicle air conditioning servicing and refrigerant purchasing and sale restrictions.

EPA Headquarters
401 M Street, SW
Washington, DC 20460
Phone: (800) 535-0202 or (800) 424-9346
Internet address: <http://www.epa.gov/>

For information on federal community right-to-know, hazardous waste, and emergency planning requirements that are described in this manual.

B. Regional and Local Resources

Northeast Waste Management Officials' Association (NEWMOA)
129 Portland Street, 6th floor
Boston, MA 02114
Phone: (617) 367-8558

Association for communication and cooperation among hazardous waste programs in the Northeast states. This organization has prepared a checklist and tip sheets for environmental, health, and safety regulations that apply to Auto Repair Shops.

Massachusetts Office of Business Development (MOBD)
1 Ashburton Place
Boston, MA 02202
Phone: (617) 727-3206 or (800) 5-CAPITAL
e-mail: mobd@state.ma.us
Internet address: <http://www.magnet.state.ma.us/mobd/>

For information about financial resources that can help you obtain environmentally-friendly technologies for your shop.

U.S. Department of Labor - OSHA Region 1
JFK Federal Building
Room E340
Boston, MA 02203
Phone: (617) 565-9860

For information regarding health and safety regulations in the workplace.

Coordinating Committee for Automotive Repair (CCAR)/Greenlink
National Automotive Compliance Assistance Center
Phone: (888) GRN-LINK
Internet: http://www.ccar-greenlink.org

This organization provides free assistance for automotive repair, maintenance, and other servicing businesses regarding compliance and pollution prevention. Many activity-specific and waste stream-specific fact sheets are available for downloading at this internet address.

3.5 VENDOR CONTACTS

This section lists vendors that you may wish to contact for information regarding materials and equipment discussed in this manual. This vendor list is not a complete list of all vendors. The vendors listed were provided by MABA representatives. The sponsors of this manual are not endorsing any of the listed vendors. They are providing the vendor lists as a starting point for you to investigate new technologies. You also should contact trade associations, your suppliers, and other vendors to investigate the feasibility of a new technologies or materials for your shop.

3.5.1 Coating Material Vendors

This section lists coating material vendors that can provide information regarding surface preparation solutions, primers, and paints.

3M Automotive Trades Div.
3M Center
St. Paul, MN 55144-1000
(612) 733-1100

Akzo - Nobel
5555 Spalding Drive
Norcross, GA 30092
Att: Edward Pietrza
(312) 906-7500

American Standox, Inc.
47802 West Anchor Court
Plymouth, MI 48170
Att: Jennifer Hackney
(734) 454-4556

BASF Corporation
P.O. Box 2757
Whitehouse, OH 43571
Att: Bradley M. Richards
(419) 877-5308

E.I. Dupont de Nemours & Co.
Brandywine Bldg. 5202
1007 Market Street
Wilmington, DE 19898
Att: Fred Wissemann
(820) 298-7668

House of Kolor (Valspar)
210 Crosby Street
Picayune, MS 39466
Att: Douglas Ho
(800) 845-2500

ICI Autocolor
801 Canterbury Road
Westlake, OH 44145
Att: James Kantola
(800) 647-6050

Sherwin Williams
101 Prospect Avenue, NW
Cleveland, OH 44115
Att: Gregory Ocampo

Kirker Enterprises Inc (BC Automotive)
East 11th Street
P.O. Box 1700
Paterson, NJ 07544
Att: Drew Bladen

Matrix System Mfg.
4205 Marten Road
Walled Lake, MI 48390
Att: Ken Dudley
(800) 735-0303

PPG Industries
3800 West 143rd Street
Bldg. 46A, 3rd Floor
Cleveland, OH 44111-4901
Att: Ron Hilovsky
(216) 671-0050

Spies Hecker, Inc.
55 Sea Lane
Farmingdale, NY 11735
Att: Stephen Apollo

3.5.2 Painting Spray Gun Vendors

This section lists painting spray gun vendors.

AccuSpray Incorporated
26881 Cannon Road, P.O. Box 391525,
Cleveland, OH 44139-1525
Att: Robert Butcher
(800) 618-6860

AIMCO
P.O. Box 80153
Conyers, GA 30208
Att: John Williams

Air Power, Inc.
2304 Atlantic Ave., P.O. Box 41165
Raleigh, NC 27629-1165
Att: Ronnie Lowe

Astro Pneumatic Tool Co.
4455 East Sheila Street
Los Angeles, CA 90023

Binks Manufacturing Company
9201 West Belmont Avenue
Franklin Park, IL 60131
Att: Ralph W. Neuman
(708) 671-3000

Central Pneumatic
Harbor Freight Tools
3491 Mission Oaks Boulevard
Camarillo, CA 93011-6010

Croix Air Products, Inc.
520 Airport Road
Fleming Field
South St.Paul, MN 55075
Att: Mick Lumby

DeVilbiss Automotive Refinishing
Products
1724 Indian Wood Circle
Maumee, OH 43537
Att: Dan Hasselschwert
(800) 338-4448

Graco Inc.
P.O. Box 1441
Minneapolis, MN 55440-1441
Att: Glen Muir
(800) 367-4023

IWATA America, Inc.
2416 E Street NE
Auburn, WA 98002
Att: Robert A. Sittig

J.R. Technical Products
500 Oakwood Road
Lake Zurich, IL 60047
Att: Rick Hege

Lex-Aire Products
342 Sullivan Road
North Billerica, MA 01862
Att: Frank Myers

Mattson Spray Equipment
230 West Coleman Street
Rice Lake, WI 54868
Att: Stephanie Herzog

Paasche
7440 W. Lawrence, Dept. 993
Harvard Heights, IL 60656-3497
(800) 621-1907

SATA Spray Equipment DBA DAN-AM Co.
HWY 16 & 63 North
Spring Valley, MN 55975
Att: Hans Jorgensen
(800) 533-8016

Sharpe Manufacturing Company
8750 Pioneer Boulevard
Santa Fe Springs, CA 90670
Att: H.L. Forsgren
(800) 742-7731

Snap-On Tools Corp.
Regional Customer Service Center
91 Cedar Street
Milford, MA 01757
(508) 478-5818 or 634-3535

Walcom USA, Inc.
7704 Trinity Boulevard
Fort Worth, TX 76118
Att: Milo Clanahan

You should ask these vendors about high volume low pressure (HVLP) or low volume low pressure (LVLP) spray guns. These spray guns are required in Massachusetts.

3.5.3 Spray Gun Washer Vendors

The following table lists spray gun washer vendors. The price range for these units is about $150 to $1,200.

SPRAY GUN WASHER VENDORS

COMPANY	TELEPHONE NUMBER
ASTRO PNEUMATIC TOOL CO.	800-221-9705
CENTRAL PNEUMATIC	800-905-5220
CITATION CLEANING EQUIPMENT	800-661-5058
DOWMAR SOLVENT RECOVERY SYSTEMS	904-774-1311
DRESTER	800-676-6696
GUN BUTLER	800-226-9948
HERKULES EQUIPMENT	800-444-4351
LENAN CORPORATION	800-753-1601
SAFETY-KLEEN CORPORATION	800-323-5040
UNI-RAM CORPORATION	905-477-5911

You also may wish to contact other auto shops, your trade association, suppliers, and other contacts that you trust for more vendor information.

3.6 FORMS, LABELS, AND EXAMPLES

This section provides an example hazardous waste label, an example spill report form, and an example wastewater collection unit diagram.

Figure 3-1 shows an example hazardous waste label. You can buy these labels as stickers from one of your local suppliers (for example, your health and safety equipment supplier, hazardous waste transporter, or waste management facility).

Figure 3-1 Example Hazardous Waste Label

HAZARDOUS WASTE

NAME OF WASTE

_____

_____

HAZARD(S) _____

_____

DATE ACCUMULATION BEGAN _____/_____

HANDLE WITH CARE

Figure 3-2 shows an example Spill or Release Report Form that you could use to report a spill to the DEP. There is no official form - you must simply provide this information.

Figure 3-2 Sample Spill or Release Report Form

Shop Name: _____

_____

Shop Contact Name and Phone Number: _____

_____

Date of Spill or Release: _____

Report Date to DEP (by telephone): _____

Report Date to DEP (using this form): _____

Name of Pollutant Released or Chemical Spilled: _____

_____

Response Actions and Amount of Material Recovered: _____

_____

_____

Material Released to Environment (amount and where it went): _____

_____

_____

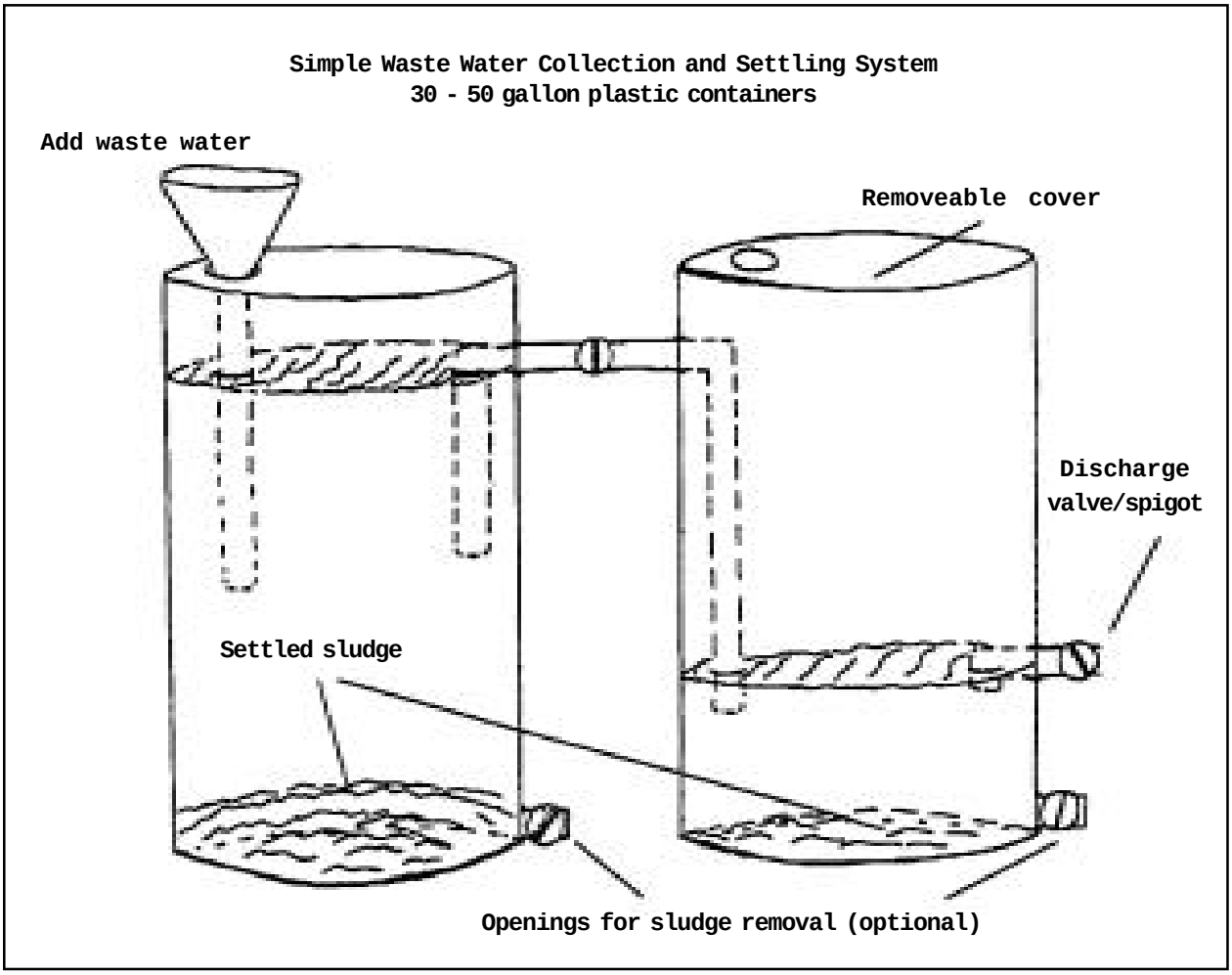
Other Actions Required and Dates to be Implemented: _____

_____

_____

Figure 3-3 shows an example of a simple wastewater collection and settling unit that you can use to manage your shop's wastewater. See section 2.1.2.B of the Workbook to learn about wastewater management requirements.

Figure 3-3 Example Wastewater Collection and Settling System



Source: "Water Pollution Prevention Practices for Auto Body Shops," Palo Alto Regional Water Quality Control Plant, Palo Alto, California (provided by Margaret Zittol)

4 Financial Tools and Positive Policies

This section describes financial assistance resources and several policies developed by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP). These policies encourage businesses to seek compliance assistance or self audit their environmental compliance and report the results of these audits to agencies that can assist them in improving their compliance.

To many, cooperation between businesses and the government is a new idea. However, all parties are learning that the best environmental results often can be achieved in a cost-effective manner by working together to improve long-term business practices and environmental compliance.

4.1 FINANCIAL ASSISTANCE FOR SMALL BUSINESSES

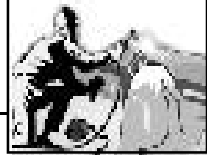
This section provides some ideas that you can use to evaluate environmental projects to see how much money they may cost or save you. In addition, it provides ideas that you can use to get free assistance or help in financing some of these projects, especially those that are required by law.

It costs every business owner something to comply. Enforcement of environmental, health, and safety (EHS) requirements must be even-handed across the state, in order to equally protect the well-being of all workers and residents. For this purpose, some requirements may offer very little enforcement flexibility. Still, it may be difficult for a shop owner to get the money to purchase new high volume low pressure (HVLP) guns, proper protective gear for workers, a new paint booth, or other retrofits that are required to achieve compliance.

In cases where compliance or pollution prevention projects require expensive retrofits or changes, shop owners may need loans to buy the equipment that will help them comply. To help make loans more easily available to shops, the state is in the process of working with financial lenders to encourage them to make money available (NOTE: these are loans, not grants) so that shops can run clean, well managed businesses. These loans eventually may be available through a community bank, the Small Business Administration, or some other source. This section discusses financial analysis and potential funding sources for compliance and pollution prevention projects.

4.1.1 Financial Analysis for Environmental Projects

When you analyze environmental projects, it is easy to see the costs. Sometimes, it is hard to see the benefits. This section presents some ideas on how to evaluate the full cost and benefit of these types of projects.



Remember: You can call OTA at (617) 626-1060 for free help in doing a cost/benefit analysis for an environmental project.

A. Compliance Projects

These are projects that require specific materials (like compliant coatings) or equipment (like spray painting guns or approved gun washers) to comply with the law. For example, if you do not have an approved gun washer for your spray painting guns, you are required to get one. The cost of a gun washer is easy to evaluate. At first, there may not appear to be any benefits. However, the following benefits should be considered:

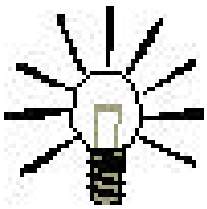
- approved gun washers use less solvent than regular gun washers - therefore, you can estimate the amount of raw solvent material and solvent waste that you will not need to pay for - this is a savings. Other compliance projects also may have similar savings.
- approved gun washers use less labor than regular gun washers - therefore, depending on how often you clean your guns, you may save a lot in labor costs.
- if an inspector comes to your shop and you don't have these gun washers, you could be written up, fined, and/or closed. How much would that cost you? Installing the approved gun washer will help you avoid that worry, hassle, and cost.

For many compliance projects, there are hidden savings like these. You should consider the savings that you will gain (through avoided costs and worries) if an inspector comes to your shop and the fact that these projects are required by law. You also may reduce your liability by complying with the law.

B. Pollution Prevention Projects

Many pollution prevention projects are not required by law. Therefore, you should evaluate them like other projects when you consider spending money on them. Hidden areas of savings to consider for these projects include:

- raw material, energy, and labor savings that are associated with the new material or technology,
- avoided fines or penalties that come through improved compliance and may come through your "good faith efforts" to move beyond compliance,
- avoided liability through reduced waste generation (even after waste is gone from your shop, you are still liable for its ultimate disposal),
- avoided liability through safer working conditions,
- reduced waste management costs, (labor, transportation, offsite treatment, and disposal), through reduced waste generation, and
- increased productivity because these technologies are often easier for workers to use and increase morale because workers know that you care about their health and safety.



Idea: if you can involve workers in testing and selecting a pollution prevention material or technology, it generally will be accepted much more easily; this is because the workers will know that it is easy to use, safer, and equal or better in performance (for example, cleaning power or painting quality) to the method that they were using. They also will have "bought in" to the idea since they had a say in it.

In addition, if your are fined for noncompliance, you may be able to reduce your penalty by implementing a supplemental environmental project that addresses pollution prevention (see Section 4.1.2 below).

4.1.2 Financial Strategies for Environmental Projects

If you want to try, or buy, a material or technology but don't have the up-front money or are worried about how well the material or technology will perform, you may want to try the following:

- apply for a grant to test the new technology - some government agencies, like EPA, provide grants for such projects on a competitive basis;
- volunteer to be a demonstration site for your supplier or trade association - because suppliers want to sell their new materials and technologies, you may be able to get YOUR stuff for free or at a reduced cost if you let the supplier do a demonstration and invite other area shop owners to watch the demonstration or get access to your results; or
- apply for a loan that is designed to encourage small businesses to implement environmental projects.

EPA Region 1 New England, with help from the Northeast Waste Management Officials' Association (NEWMOA), prepared a guide on financing sources that can provide grants or low-interest loans. This document is called *Financing Pollution Prevention Investments: A Guide for Small and Medium-sized Businesses.* Copies are available from Linda Darveau of EPA at (617) 565-4993. Some ideas regarding grants, supplemental environmental projects, and loans discussed in this guide include:

EPA

Pollution Prevention Grants - This program is offered annually and awards pollution prevention grants to projects that achieve pollution prevention and also transfer information regarding pollution prevention knowledge. To get a grant, you must design a pollution prevention project and apply in accordance with EPA grant application procedures.

Supplemental Environmental Projects (SEPs) - If you are assessed a penalty for noncompliance, you may be able to propose a SEP and implement a pollution prevention project. If your SEP is approved, your penalty will be reduced and you can use the money that you would have paid as a penalty for a project that benefits your shop's environmental performance. You can't do a SEP to comply with the law. That is, if you don't have approved spray painting equipment, you can't do a SEP to buy the HVLP or LVLP equipment. You HAVE to comply with the law. However, you could propose to implement some other enviromental project, like a material substitution project, a training program, or an equipment upgrade to your spray booth that will improve health and safety or environmental protection

in your shop. Talk to EPA (and also DEP) if you find yourself facing a penalty and see what options are open to you. If you demonstrate a good faith effort to comply with the law, you may be able to do a SEP and cut your penalty (also see Section 4.3 for more information).

Small Business Administration (SBA)

Loan Programs - The SBA is designed to help small businesses get access to capital at reasonable rates. It has various loan programs for equipment, construction, and pollution control. For more information, contact your local bank and ask about SBA loans. You also can call the Massachusetts SBA program at (617) 565-5590.

Toxic Use Reductions Institute (TURI)

Matching Grants for Industry - This fund provides 100% matching grants for technology demonstrations (up to $25,000) or feasibility studies (up to $5,000) for projects that reduce toxic chemicals use. Call TURI at (978) 934-3275 for more information.

Massachusetts Business Development Corporation

Massachusetts Capital Access Program - This program can provide loans of up to $500,000 at 1.5 to 3 percent borrow fees for the purchase or construction of fixed assets (like buildings and equipment) for small-and medium-sized businesses that can't get loans through other means. Call (617) 350-8877 for more information.

Massachusetts Industrial Finance Agency (MIFA)

Direct Loans and Loan Guarantees - This agency can provide direct loans and loan guarantees at variable fees for projects that help businesses expand and create jobs. Some pollution prevention technologies may meet these criteria. The maximum loan is $250,000.

Tax-Exempt Equipment Lease or Purchase Program - This program finances new equipment leases where equipment is needed for a manufacturing process. This program usually is used for larger projects (at least $300,000).

For more information on these loans and tax breaks, call MIFA at (617) 451-2477.

4.2 EPA AND DEP SMALL BUSINESS COMPLIANCE INCENTIVE POLICIES

Both EPA and DEP have developed small business compliance incentives policies that may be able to reduce your penalty, if violations are identified at your shop.

These policies are fairly similar, except the EPA policy considers shops with up to 100 employees to be SMALL - while the DEP considers shops with 10 or less full-time employees to be SMALL. Read about these policies to learn about them and how they can benefit shops like yours.

4.2.1 EPA Small Business Compliance Incentives Policy

This section describes EPA's small business compliance incentives policy (the Policy), which became effective on June 10, 1996.

BACKGROUND AND PURPOSE

This Policy is intended to promote environmental compliance among small businesses by providing them with special incentives (1) to participate in compliance assistance programs or to conduct environmental audits and (2) to correct violations promptly.

This Policy is one of the 25 regulatory reform initiatives announced by President Clinton on March 16, 1995; it implements, in part, the Executive Memorandum on Regulatory Reform, which was issued on April 21, 1995. This Policy also implements Section 323 of the Small Business Regulatory Enforcement Fairness Act of 1996, which was signed into law by the President on March 29, 1996. This Policy expands upon EPA's August 12, 1994, policy for Clean Air Act Section 507 Small Business Assistance Programs by applying the same principles to other environmental programs.

This Policy explains how EPA expects to exercise its enforcement discretion in deciding on an appropriate enforcement response and determining an appropriate civil penalty for violations by small businesses.

SCOPE OF POLICY

For the purposes of this Policy, a small business is defined as a person, corporation, partnership, or other entity that employs 100 or fewer individuals across all facilities and operations owned by the entity.

CRITERIA FOR PENALTY ELIMINATION OR REDUCTION

EPA will eliminate the entire civil penalty if a small business satisfies all four of the criteria below:

1 Good Faith Effort -- The small business has made a good faith effort to comply with applicable environmental requirements as demonstrated by either:

a. receiving on-site compliance assistance from a government or government-supported program and the violations are detected during the compliance assistance or, in the case of confidential assistance programs, the business discloses the violations to the appropriate regulatory agency; or

b. conducting a voluntary environmental audit and promptly disclosing in writing to the appropriate regulatory agency all violations discovered as part of the audit.

2 First Violation -- In the past three years, the small business was not subject to an information request, warning letter, notice of violation, field citation, citizen suit or other enforcement action or received penalty mitigation pursuant to this Policy for the current violation. And, in the past five years, the small business has not been subject to two or more enforcement actions for environmental violations.

3. Corrections Period -- The business corrects the violation and remedies any harm associated with the violation within six months of its discovery. Small businesses may have an additional six months, if necessary, to correct the violation if pollution prevention technologies will be used.

4. Lack of Harm and No Criminal Conduct -- The Policy applies if:

   a. the violation has not caused actual serious harm to public health, safety, or the environment;

   b. the violation is not one that may present an imminent and substantial endangerment to public health or the environment;

   c. the violation does not present a significant health, safety, or environmental threat; and

   d. the violation does not involve criminal conduct.

If a small business meets all of the criteria, but it needs a longer corrections period than provided by item 3 or, in the rare instance where the small business has obtained a significant economic benefit from the violation(s) such that it may have obtained an economic advantage over its competitors, EPA will waive up to 100% of the gravity component of the civil penalty, but may seek the full amount of any economic benefit associated with the violations.

APPLICABILITY TO STATES

EPA will defer to State actions that are generally consistent with this Policy.

For more information call: Dwight Peavey of EPA at (617) 565-3230 or Karin Leff of EPA at (202) 564-7068.

4.2.2 DEP Small Business Compliance Incentives Policy

This section provides a simple explanation of DEP's small business compliance incentives policy and how it can help you. This policy should be read in conjunction with the DEP Environmental Audit Policy described in Section 4.3. DEP may use these policies together when evaluating compliance flexibility.

Basically, if you are discovered to be in noncompliance through an enforcement or compliance assistance visit to your shop, you may be able to have your penalty mitigated. Any reduction would be determined by DEP and be based on your demonstrated good faith efforts to comply with the law and your willingness to (1) seek additional assistance, (2) comply with the law as soon as possible, and (3) consider pollution prevention options for your shop. That's why using this manual to learn about EHS requirements and pollution prevention tips, reviewing your compliance, and making EHS improvements are good ideas.

The Policy's Goals

The Small Business Policy is intended to (1) promote environmental compliance by small businesses by providing them with incentives to seek on-site compliance assistance or conduct environmental audits and (2) achieve statewide consistency in responding to noncompliance by small businesses by providing guidance to DEP staff on how they should use flexibility in these cases.

The Policy is designed to allow flexibility in enforcement for good faith players, NOT to reduce compliance goals. EVERY small business is required to comply fully with EHS laws and will be regulated in a manner consistent with other small and big shops to the fullest extent possible.

The Policy's Use

DEP will decide whether to extend the incentives and benefits outlined in this Policy for each particular case.

Definition of a Small Business

In general, a small business is one that employs 10 or less full-time workers.

Options if Noncompliance is Identified for a Small Business

The law requires that DEP must address noncompliance by either (1) issuing a written notice of noncompliance (NON) or (2) assessing an administrative penalty.

Issue a Written NON with a Recommendation to Seek Compliance Assistance

For small businesses, DEP will issue a NON if a violation is found - as long as (1) no preconditions for DEP to issue an administrative penalty exist and (2) the violations are not within specified categories that do not allow for flexibility. Call DEP at (800) 462-0444 outside of Boston, or (617) 338-2255 in Boston for more information on this flexibility.

When DEP issues a NON, it will encourage that small business to seek compliance assistance from a third party or government support agency, for example: EPA's New England Environmental Assistance Team (NEEAT) or the Massachusetts Office of Technical Assistance for Toxics Use Reduction (OTA) in order for that shop to return to compliance, assure future compliance, and investigate pollution prevention measures.

Administrative Penalty Calculation and Mitigation

If violations require that an administrative penalty be issued, DEP must assess the penalty in the same manner that it would for other businesses. However, DEP can still be flexible and reduce the penalty for small businesses using the following guidelines:

- calculate a penalty appropriate to the case facts and consistent with DEP penalty calculation guidance;

- if DEP determines that the business can't pay a penalty, DEP should consider (a) an alternative payment plan or (b) a suspension or complete waiver of the penalty, if imposing the penalty will impede the shop's ability to comply or perform measures to fix the noncompliance items.

- DEP can suspend or waive the entire penalty, provided that all of the following conditions are met:

  (a) the small business agrees to return to compliance promptly;

  (b) noncompliance has not caused actual harm to public health and safety or the environment and does not present a significant threat;

  (c) the noncompliance does not involve criminal conduct;

  (d) the small business demonstrates a good faith intention to maintain future compliance by either (i) obtaining compliance assistance, (ii) conducting an environmental audit under the Environmental Audit Policy (see Section 4.3), or (iii) agreeing to conduct response actions, if necessary, under the state site cleanup laws [Massachusetts General Law (MGL) Chapter 21E and 310 Code of Massachusetts Regulations (CMR) 40]. If the shop's noncompliance was identified through compliance assistance providers, item (d)ii does not apply because it has already been satisfied by the shop's participation in the compliance assistance that discovered the violation;

  (e) the small business agrees to investigate pollution prevention options and implement those considered feasible by the shop and the DEP; and

  (f) the small business has not been involved in a higher level of enforcement action for the last 5 years.

If a shop does not satisfy all of the above conditions, DEP may not suspend or waive the entire penalty, but may mitigate some of the penalty based on specific facts involved in that case.

4.3 DEP ENVIRONMENTAL AUDIT POLICY

DEP's Environmental Audit Policy encourages businesses to self-police their compliance and report their results to government agencies. It encourages this by reducing penalties and refraining from recommending criminal prosecution for violations that are discovered through voluntary audits, compliance management systems, or other activities, as long as companies demonstrate their serious intent to comply with the law, promptly disclose compliance issues, and quickly resolve compliance issues.

If a business demonstrates that it satisfies the conditions listed below, DEP can exercise enforcement flexibility to encourage voluntary self-policing. Again, DEP will use its discretion to implement the policy on a case-by-case basis.

How can I qualify for the Environmental Audit Policy's regulatory flexibility?

To qualify for the flexibility described above for a particular violation, you must:

- discover the violation that you report through an environmental audit or another systematic procedure to assess your compliance;
- discover the violation through voluntary, not mandated, environmental monitoring;
- report the violation within 10 days;
- discover and disclose the violation independent of a third party or government agency;
- correct the violation within 30 days;
- take steps to prevent the violation from happening again;
- have no history of more significant enforcement actions by the government within the past 5 years;
- exclude any other violations that you did not discover yourself; and
- cooperate with the DEP.

What are the benefits to me?

If you qualify for the flexibility allowed by DEP, it will evaluate your case and do one or more of the following:

- NOT issue a NON that could provide a foundation for future enforcement;
- NOT impose punitive damages for any penalty that is assessed;
- REDUCE your penalty, if one is assessed, by up to 50 percent;
- NOT make a criminal recommendation to the Office of the Attorney General; and
- NOT request routine audit reports.

DEP will evaluate each case individually in applying the potential benefits described above.

5 Glossary Tool

This section provides definitions for terms that are used in the manual. Some of these terms are regulatory terms that you should understand to make sure that you are complying with the law. Others are auto body shop terms provided for readers that do not work in this industry. The list is provided in alphabetical order.

ABC-rated Extinguisher. Multi-purpose dry chemical extinguisher (ammonium- phosphate base) for general use on A, B, and C class fires. **A class fires:** Ordinary combustibles (paper, wood, cloth). **B class fires:** Flammable liquids (gasoline, oil, grease). **C class fires:** Live electrical equipment.

Best Management Practice (BMP). Method of operation that is designed to maximize efficiency, minimize waste, prevent pollution, improve safety, reduce costs, or achieve a combination of the above.

Biodegradable. Capable of decomposing rapidly under natural conditions.

Body Filling. Auto body shop activity that fills dents or scratches in a vehicle's surface. This activity can use raw materials that contain hazardous ingredients like styrene, a Hazardous Air Pollutant. See Section 1 of the Toolbox, Auto Body Repair Step-By-Step, for compliance and pollution prevention tips for this activity.

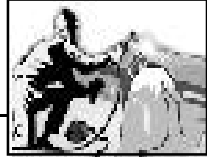
Cathodic Protection. A method of protecting metal surfaces that prevents them from eroding. It does this by making the metal surface the cathode in an electrochemical cell. This is a good way to prevent wear in tanks, which can result in leaks over time.

Cease and Desist Order. A serious enforcement action which requires the wrongful party to halt production, service, or a particular practice at its facility.

Class I Locations. As defined in the National Electric Code, these are locations (such as spray booths) in which flammable gases or vapors exist (or may exist) in the air, in quantities which are high enough to produce explosions or fires.

Class I, II, and III Liquids. The Massachusetts State Board of Building Regulations and Standards has classified flammable and combustible liquids as Class IA, IB, IC, II, and III, based on the temperature at which the liquids give off enough vapors to cause a fire hazard. The Occupational Safety and Health Administration (OSHA) has developed specific regulations regarding the storage of these liquids.

Combustible Liquid. A liquid which will ignite readily when exposed to a spark or ignition source (flash point of less than 140° Fahrenheit).



Compliance Assistance. Technical assistance that is non-enforcement oriented and provides help to businesses in complying with the law and implementing preventing pollution. This is often provided by state- or federal-sponsored programs through non-enforcement branches of the government, universities, consultants, or other parties.

Compliant Coatings. Surface finishing materials that meet the volatile organic compound limits of the federal or state regulations. See page 2-6 of the Workbook (Regulatory and Pollution Prevention Overview) for a table that lists volatile organic compound (VOC) limits for different materials that you use in your shop. NOTE: The VOC limits apply to coatings at the time you apply them so it is important to mix them as directed by the manufacturer.

Contingency Plan. A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or other accident that releases toxic chemicals, hazardous waste, or radioactive materials that threaten human health or the environment.

Corrosive Waste. Waste containing a chemical agent that reacts with the surface of a material causing it to deteriorate or wear away (for hazardous wastes, a material is characterized as corrosive if its pH level is less than 5 or greater than 10).

Cross-draft Ventilation. Type of spray enclosure in which the flow of air is horizontal (across the enclosure), rather than vertical (from the top to the bottom of the enclosure).

Cutting and Welding. An auto body repair activity that can create noxious fumes and potentially release metal fines and sparks to the environment. See Section 1 of the Toolbox, Auto Body Repair Step-By-Step, for compliance and pollution prevention tips for this activity.

Dismantling. An auto body repair activity that takes a vehicle apart so that it can be reconstructed. This activity can have environmental impacts if fluids or emissions associated with dismantling are not properly managed; it also can present some safety risks. See Section 1 of the Toolbox, Auto Body Repair Step-By-Step, for compliance and pollution prevention tips for this activity.

Down-draft Ventilation. Type of spray booth in which the flow of air is vertical (from the top to the bottom of the enclosure), rather than horizontal (across the enclosure).

Engineering Controls. Mechanical controls and equipment that are designed to protect worker health and safety (such as ventilation, alarms, and filters).

Environmental Liability. The legal liability that a company or person incurs if it owns or operates a shop that violates an environmental law or causes damage to the surrounding environment as a result of the company's or person's operations.

Environmental, Health, and Safety (EHS) Program. A program developed by a workplace or business to protect the environment and worker safety. An EHS program incorporates and implements procedures that help ensure chemicals and activities are managed in a safe and environmentally sound manner.

Environmental Audit. An independent assessment of a facility's current compliance status with relevant environmental requirements. This can address any and all elements of a shop's operations.

Fire Area. Any part of a shop that is separated by a wall that has a one-hour fire resistance rating.

Fire Resistant. A material which does not conduct or cause fire; such materials are used in hazardous waste storage containers and other safety equipment.

Flammable Liquid. A liquid that has a flash point below 100° Fahrenheit and has a vapor pressure not exceeding 40 pounds per square inch (psi) at 100° Fahrenheit.

Flashback. A phenomenon associated with welding and the use of a torch; flashback occurs when stray sparks come in contact with welding flak or stray particles and ignite back towards the torch operator. This is a potentially dangerous situation. Flashback can be avoided through proper use of a torch and non-flashback equipment.

Flash Point. The lowest temperature at which a liquid will yield enough vapor to support combustion when combined with air and a source of ignition. (This temperature is lower than the *burning point*, at which a substance forms enough vapor to support a steady flame when exposed to air).

Frame Work and Structural Work. Auto body repair activity that straightens and mends a vehicle's frame and other structural components. This activity can be dangerous if not done properly. See Section 1 of the Toolbox, Auto Body Repair Step-By-Step, for compliance and pollution prevention tips for this activity.

Grinding and Sanding. Auto body repair activity that prepares surfaces for filling or painting. This activity can generate dusts, filings, and wastes that may be released to the environment or harm employees. See Section 1 of the Toolbox, Auto Body Repair Step-By-Step, for compliance and pollution prevention tips for this activity.

Hazard Assessment. The review and evaluation of a shop's operations for potential health injuries or diseases that may be caused by a chemical, process, or facility design and the conditions of exposure under which such health effects are produced. This assessment is used to identify appropriate precautions that workers should take when performing certain shop activities.

Hazardous Air Pollutant (HAP). Air pollutants which are not covered by ambient air quality standards but which reasonably may be expected to cause or contribute to irreversible illness or death, according to the Clean Air Act Amendments. Such pollutants include: benzene, chromium compounds, hexane, methyl isocyanates, styrene, toluene, and vinyl chloride.

Hazard Communication Program. An OSHA-required program developed by a firm or workplace which identifies potential hazards associated with workplace activities and outlines procedures that will be undertaken by all employees to prevent injury and in the event of a chemical exposure or accident. See Section 2 of the Toolbox, Health Protection and Fire Prevention Requirements, for more information.

Hazard Communication Standard. Under OSHA, the Hazard Communication Standard, Title 29 Code of Federal Regulations 1910.1200, requires firms to develop and implement a Hazard Communication Program.

Hazardous Waste. Waste generated by a business or residence that can pose a substantial or potential hazard to human health or the environment when improperly managed. These are defined as wastes that possess at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity) or wastes that are determined to be hazardous by definition and listed as such by EPA or states. See pages 2-15 and 2-16 of the Workbook, Regulatory and Pollution Prevention Overview, for a table that lists common auto body shop hazardous wastes.

Hazardous Waste Generator. Any facility that generates hazardous waste. Generators are regulated based on how much hazardous waste they generate. See page 2-11 of the Workbook for more information on these generator categories.

Hazardous Waste Manifest. A multi-part form that is used to track each hazardous waste shipment from its point of generation to its ultimate disposal or treatment. The use of these forms is required under EPA and DEP hazardous waste requirements. These forms list the generator identification number, the name of the waste generator, all waste transporters, the name of the designated receiving facility, and the quantity and type of hazardous waste being shipped.

High Efficiency Particulate Air (HEPA) Filter Cartridge. A type of filter used in a respiratory device to protect its user from airborne particulate matter.

Health and Safety Officer (HSO). The individual responsible for the health and safety program in a shop or business.

Heating, Ventilation, and Air-Conditioning (HVAC). Refers to systems which control building HVAC requirements including pipes, electrical components, switches, thermostats, and related equipment.

High Volume Low Pressure (HVLP)/Low Volume Low Pressure (LVLP) Paint Spray Guns. Paint guns that have an air pressure between 0.1 and 10 pounds per square inch (psi) at the air cap. They use less coating material to cover a given panel area than traditional guns when used properly. These are required for auto body shop painting activities in Massachusetts.

Ignitable Waste. Waste which can cause fire through friction, absorption of moisture, or through spontaneous chemical changes when ignited; it has a flash point of less than 140º Fahrenheit (about 60º Celsius).

Imminent Threat or Hazard. An activity or condition that poses an immediate danger to human health or the environment.

Industrial Wastewater. The spent or used water from an industry that contains dissolved or suspended matter. Auto body shop wastewater from laundry, cleanup, vehicle washing, and other shop activities is considered industrial wastewater.

Interstitial Monitoring. The continuous surveillance of the space between the walls of an underground storage tank, using specialized equipment in that space.

Large Quantity Generator (LQG). Person or facility that generates more than 2,200 pounds of hazardous waste per month during any month in a calendar year.

Leak Detection Equipment. Equipment used to identify possible vapor or liquid leaks in underground or aboveground storage tanks or hazardous waste storage containers.

Material Safety Data Sheets (MSDS). Printed documents generated by chemical manufacturers that describe the contents of a material, its hazards, appropriate protection measures, and other health and safety and emergency information. See Section 2 of the Toolbox, Health Protection and Fire Prevention Tools, for more information on MSDSs and why an auto body shop needs to have them in the shop.

National Fire Protection Association (NFPA). National association responsible for providing guidelines on fire prevention and fire safety.

Oil-water Separator. Also called a grease trap or gas trap. Used to separate industrial wastewater before it is discharged to a floor drain, sanitary sewer, industrial septic system, or the ground. The separator physically removes the oil and particles from the wastewater because floating oil and particles will separate from the water in the unit. The sludge and oil must be collected and managed as a hazardous waste or oil waste.

Occupational Safety and Health Administration (OSHA). Federal agency within the U.S. Department of Labor. Responsible for developing and enforcing safety standards which minimize possible hazards relating to the workplace.

OSHA Consultation Program. A free service designed to help employers with technical and regulatory occupational safety and heath questions. This service provides site visits to your shop to review OSHA Compliance and tips to help you comply with the law.

Ozone Layer. The protective oxygen (as O_3) in the atmosphere, about 15 miles above the ground, that absorbs some of the sun's ultraviolet rays and reduces the amount of potentially harmful radiation that reaches the earth's surface.

Permanent Seal. A seal on a drain that is no longer removable. This includes a concrete seal or bolted cover, but not a rubber plug or mat.

Personal Protective Equipment (PPE). Any health and safety equipment used to protect workers from potentially harmful materials or activities. PPE includes: goggles, gloves, respirators, steel-toed boots, ear plugs, and more. See Section 2 of the Toolbox, Health Protection and Fire Prevention Tools, for more information on PPE and why an auto body shop needs to have it in the shop.

Pollution Prevention (P2). The implementation of activities or practices that avoid the use and generation of environmentally harmful materials. Common P2 activities include reducing toxics use, using non-toxic alternatives, improving efficiency and therefore reducing waste, recycling or reusing materials, and modifying operations to avoid the need for materials that are, or may become, environmentally harmful.

Publicly Owned Treatment Works (POTW). A wastewater treatment plant owned by a state, unit of local government, or Indian tribe, usually designed to treat domestic and pretreated industrial wastewaters.

Raw Material. Product or material used in a value-added process or service; for auto body shops, raw materials include: solvents, fillers, coatings, cleansers, automotive fluids, metal parts, and more. The conservation of these materials is possible by using pollution prevention and waste reduction tips provided in this manual.

Reactive Waste. Waste which is capable of reacting with other chemicals, is normally unstable, and can undergo violent changes with or without exploding. A reactive waste may respond violently with water and may generate toxic gas, vapor, or fumes when mixed with water.

Release to the Environment. Situation where a regulated material (hazardous substance) escapes a shop through a window or door (if it is airborne), or leaks out through a crack in the floor or an open door. These releases can harm air quality, or the nearby groundwater, surface water, or soil quality, or present a risk to human health.

Reportable Quantity (RQ). The amount of oil or hazardous material released to the environment which would require you to notify the proper authorities. See page 2-14 of the Workbook, Regulatory and Pollution Prevention Overview, for a list of Reportable Quantities.

Resource Conservation and Recovery Act (RCRA). Federal law that regulates solid and hazardous waste. The EPA and the Massachusetts Department of Environmental Protection (DEP) are responsible for implementing this law.

Satellite Accumulation Area. Area where a hazardous waste is accumulated in a container until the container becomes full and is moved to a hazardous waste storage/accumulation area. Waste in this area must be at, or near, the point of generation and under the control of the process operator at all times.

Self-Assessment. When a company reviews its processes and practices to measure compliance with state and federal environmental, health, and safety requirements. This is generally conducted by shop personnel or outside consultants to improve compliance and prepare for potential government inspections.

Small Quantity Generator (SQG). Person or facility that generates between 220 to 2,220 pounds per month of hazardous waste.

Source Registration. The process of documenting all potential or actual sources of volatile organic compound emissions within a shop or industry, and reporting that information to the appropriate state or federal agency. In Massachusetts, this registration will generally apply to only larger auto body shops. In most cases, shops will need to complete a source registration only if the state mails them a source registration package.

Spray Area. Any area where dangerous quantities of flammable or combustible vapors, mists, residues, dusts, or deposits are present due to the operation of spray painting or coating processes. According to the NFPA Code 33, the spray area includes areas inside the spray booth or spray room, as well as ducts exhausting from spray painting processes. When spray areas are not confined adequately, the "spray area" may extend out to the entire room.

Spray Booth. A structure which encloses a spraying operation to limit the escape of spray, vapor, and residue, and which conducts these materials to an exhaust system. A spray booth is fully-enclosed, ventilated, and equipped with fire prevention and safety equipment described elsewhere in this Workbook and Toolbox. Generally a spray booth has three walls and one open side.

Spray Enclosure. A general term which includes a spray booth or a spray room.

Spray Painting. Autobody repair activity that coats a vehicle. This activity can generate volatile organic compounds and poses a potential for fires and health hazards. See Section 1 of the Toolbox, Auto Body Repair Step-By-Step, for compliance and pollution prevention tips for this activity.

Spray Room. A fully-enclosed room used exclusively for open spraying of flammable or combustible materials. A spray room is fully-enclosed, ventilated, and equipped with fire prevention and safety equipment described elsewhere in this Workbook and Toolbox. Generally a spray room includes four walls and a door.

Surety Bond. A bond of $10,000 (for auto body shops) that is required by the Massachusetts Division of Standards (DOS) for operation of an auto body shop. The bond is carried in the event that a customer files a valid complaint for work that a shop has done on his or her car.

Toxicity Characteristic Leaching Procedure (TCLP). A laboratory procedure used to determine whether a waste is hazardous (toxic). It measures the quantity of a hazardous substance that leaches from the waste under specified conditions.

Tight Tank. A holding tank for waste oil, wastewater, or other materials before discharge or disposal.

Toxic Waste. A waste that can produce injury if inhaled, swallowed, or absorbed through the skin. For regulatory purposes, toxic wastes are evaluated using the Toxicity Characteristic Leaching Procedure.

Transfer Efficiency. The efficiency of a painting process such as electrostatic or spray painting. It compares the amount of paint that is used (mixed) to the amount of paint that ends up on parts. If all the paint ends up on the intended part or parts, the transfer efficiency is 100 percent. HVLP/LVLP spray guns are required in Massachusetts because they can reduce the amount of paint overspray and paint waste generated by normal painting methods. That is, they increase the transfer efficiency because more paint is transferred from the paint gun to the parts.

Vehicle Washing. Auto body shop activity that cleans a car to prepare it for painting or for customer pickup. Wastewater generated by this activity can pose a threat to the environment if it is not properly managed. See Section 1 of the Toolbox, Auto Body Repair Step-By-Step, for compliance and pollution prevention tips for this activity.

Volatile Organic Compounds (VOCs). Any organic compound that can alter the chemical makeup of the atmosphere through photochemical reactions. These compounds are called volatile because they can become a vapor at room temperature and pressure. Most paints and solvents used in auto body shops contain VOCs.

Very Small Quantity Generator (VSQG). Person or facility that generates less than 220 pounds per month of hazardous waste.